

**PCT**

**NOTIFICATION OF THE RECORDING  
OF A CHANGE**

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

GREEN, Clarence, A.  
Perman & Green, LLP  
435 Post Road  
Fairfield, CT 06430  
ETATS-UNIS D'AMERIQUE

<b>Date of mailing (day/month/year)</b> 30 November 2000 (30.11.00)	
<b>Applicant's or agent's file reference</b> 8001.103/10	<b>IMPORTANT NOTIFICATION</b>
<b>International application No.</b> PCT/US99/13488	<b>International filing date (day/month/year)</b> 15 June 1999 (15.06.99)

**1. The following indications appeared on record concerning:**

☐ the applicant
 ☐ the inventor
 ☒ the agent
 ☐ the common representative

<b>Name and Address</b> YIP, Alex, L. Londa & Traub LLP 37th floor 20 Exchange Place New York, NY 10005 United States of America	<b>State of Nationality</b>	<b>State of Residence</b>
	<b>Telephone No.</b> 212 968 1300	
	<b>Facsimile No.</b> 212 968 1307	
	<b>Teleprinter No.</b>	

**2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:**

☒ the person
 ☒ the name
 ☒ the address
 ☐ the nationality
 ☐ the residence

<b>Name and Address</b> GREEN, Clarence, A. Perman & Green, LLP 435 Post Road Fairfield, CT 06430 United States of America	<b>State of Nationality</b>	<b>State of Residence</b>
	<b>Telephone No.</b> (203) 259-1800	
	<b>Facsimile No.</b> (203) 255-5170	
	<b>Teleprinter No.</b>	

**3. Further observations, if necessary:**

**Please provide a power of attorney signed by all the applicants.**

**4. A copy of this notification has been sent to:**

☒ the receiving Office
 ☐ the designated Offices concerned  
☐ the International Searching Authority
 ☒ the elected Offices concerned  
☐ the International Preliminary Examining Authority
 ☐ other:

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b>  Philippe Bécamel  Telephone No.: (41-22) 338.83.38
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## TENT COOPERATION TRE.

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
 United States Patent and Trademark  
 Office  
 Box PCT  
 Washington, D.C.20231  
 ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 02 March 2000 (02.03.00)	
<b>International application No.</b> PCT/US99/13488	<b>Applicant's or agent's file reference</b> 8001.103/10
<b>International filing date (day/month/year)</b> 15 June 1999 (15.06.99)	<b>Priority date (day/month/year)</b> 15 June 1998 (15.06.98)
<b>Applicant</b> SCHWARTZ, Robert, G. et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
30 December 1999 (30.12.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

R. Forax

Telephone No.: (41-22) 338.83.38

## PCT COOPERATION TRI

PCT

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU

To:

YIP, Alex, L.  
Londa & Traup LLP  
37th floor  
20 Exchange Place  
New York, NY 10005  
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (day/month/year) 24 August 1999 (24.08.99)	
Applicant's or agent's file reference 8001.103/10	IMPORTANT NOTIFICATION
International application No. PCT/US99/13488	International filing date (day/month/year) 15 June 1999 (15.06.99)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 15 June 1998 (15.06.98)
Applicant ASCOM HASLER MAILING SYSTEMS, INC. et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR" in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
15 June 1998 (15.06.98)	60/089,212	US	23 Augu 1999 (23.08.99)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

Juan Cruz

Telephone No. (41-22) 338.83.38



PCT

NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

YIP, Alex, L.  
Londa & Traub LLP  
37th floor  
20 Exchange Place  
New York, NY 10005  
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (day/month/year)

23 December 1999 (23.12.99)

Applicant's or agent's file reference

8001.103/10

## IMPORTANT NOTICE

International application No.

PCT/US99/13488

International filing date (day/month/year)

15 June 1999 (15.06.99)

Priority date (day/month/year)

15 June 1998 (15.06.98)

Applicant

ASCOM HASLER MAILING SYSTEMS, INC. et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
- EP,JP,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

CA

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 23 December 1999 (23.12.99) under No. WO 99/66422

**REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)**

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))**

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

J. Zahra

Facsimile No. (41-22) 740.14.35

Telephone No. (41-22) 338.83.38

# PATENT COOPERATION TREATY

## PCT

### INFORMATION CONCERNING ELECTED OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

From the INTERNATIONAL BUREAU

To:

YIP, Alex, L.  
Londa & Traub LLP  
37th floor  
20 Exchange Place  
New York, NY 10005  
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (day/month/year)

02 March 2000 (02.03.00)

Applicant's or agent's file reference

8001.103/10

#### IMPORTANT INFORMATION

International application No.

PCT/US99/13488

International filing date (day/month/year)

15 June 1999 (15.06.99)

Priority date (day/month/year)

15 June 1998 (15.06.98)

Applicant

ASCOM HASLER MAILING SYSTEMS, INC. et al

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

National : CA, JP, US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

None

3. The applicant is reminded that he must enter the "national phase" **before the expiration of 30 months from the priority date** before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed **until 31 months from the priority date** for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

R. Forax

Telephone No. (41-22) 338.83.38



The Demand must be filed with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the Applicant. The full name or two-letter code of that Authority may be indicated by the Applicant on the line below:

IPEA/US

# PCT

## DEMAND

### CHAPTER II

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only

Identification of IPEA		Date of receipt of DEMAND	
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION		Applicant's or agent's file reference 8001.103/10	
International application No. <b>PCT/US99/13488</b>	International filing date (day/month/year) 15 June 1999 (15.06.99)	(Earliest) Priority date (day/month/year) 15 June 1998 (15.06.98)	
Title of invention Technique for Securing a System Configuration of a Postage Franking System			
Box No. II APPLICANT(S)			
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  Ascom Hasler Mailing Systems, Inc. 19 Forest Parkway P.O. Box 858 Shelton, Connecticut 06484-0904 United States of America		Telephone No.: (203) 926-1087	
		Facsimile No.:	
		Teleprinter No.:	
State (that is, country) of nationality: US		State (that is, country) of residence: US	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  Schwartz, Robert G. 191 Linden Avenue Branford, Connecticut 06405 United States of America			
State (that is, country) of nationality: US		State (that is, country) of residence: US	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  Brookner, George M. 11 Surrey Drive Norwalk, Connecticut 06581 United States of America			
State (that is, country) of nationality: US		State (that is, country) of residence: US	
{ <input checked="" type="checkbox"/> } Further applicants are indicated on a continuation sheet.			

Sheet No. 2

International Application No.

PCT/US99/13488

**Continuation of Box No. II APPLICANT(S)**

**If none of the following sub-boxes is used, this sheet should not be included in the demand.**

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Eskandari, Fetneh  
144 Dove Lane  
Middletown, Connecticut 06457  
United States of America

State (that is, country) of nationality: Iran

State (that is, country) of residence: US

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Crowe, Allen A.  
76 Klein Drive  
Prospect, Connecticut 06712  
United States of America

State (that is, country) of nationality: US

State (that is, country) of residence: US

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Simcik, Mark E.  
141 Park Avenue  
Bloomfield, Connecticut 06002  
United States of America

State (that is, country) of nationality: US

State (that is, country) of residence: US

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

State (that is, country) of nationality:

State (that is, country) of residence:

☐ Further applicants are indicated on a continuation sheet.

**Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**The following person ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*YIP, Alex L.  
Londa and Traub LLP  
20 Exchange Place, 37<sup>th</sup> Floor  
New York, New York 10005  
United States of America

Telephone No.:

(212) 968-1300

Facsimile No.:

(212) 968-1307

Teleprinter No.:

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:\***

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filed.the description ☐ as originally filed☐ as amended under Article 34the claims ☐ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☐ as originally filed☐ as amended under Article 342. ☐ The Applicant wishes any amendment of the claims under Article 19 to be consider as reversed.3. ☐ The Applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

\* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: .....English.....

☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:



**Box No. VI CHECK LIST**

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

For Internal Preliminary Examining Authority use only  
received not received

- |  |   |        |     |     |
|--|---|--------|-----|-----|
| 1. translation of international application                              | : | sheets | [ ] | [ ] |
| 2. amendments under Article 34   | : | sheets | [ ] | [ ] |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets | [ ] | [ ] |
| 4. copy (or, where required, translation) of statement under Article 19  | : | sheets | [ ] | [ ] |
| 5. letter  | : | sheets | [ ] | [ ] |
| 6. other (specify):  | : | sheets | [ ] | [ ] |

The demand is also accompanied by the item(s) marked below:

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet                             | 4. <input type="checkbox"/> statement explaining lack of signature                                  |
| 2. <input type="checkbox"/> separate signed power of attorney                            | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6. <input checked="" type="checkbox"/> other (specify): Check \$652.00                              |

**Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

  
Alex L. Yip (Reg. No. 34,759)

For International Preliminary Examining Authority use only

- |  |  |
|--|--|
| 1. Date of actual receipt of DEMAND:   |  |
| 2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):   |  |
| 3. <input type="checkbox"/> The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.                        | <input type="checkbox"/> The applicant has been informed accordingly |
| 4. <input type="checkbox"/> The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5                                |  |
| 5. <input type="checkbox"/> Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82. |  |

For International Bureau use only

Demand received from IPEA on:



# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

## PCT

### NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

To: ALEX L. YIP  
LONDA AND TRAUB LLP  
20 EXCHANGE PLACE 37TH FLOOR  
NEW YORK, NEW YORK 10005

Date of Mailing  
(day/month/year)

**14 APR 2000**

Applicant's or agent's file reference

8001.103/10

#### IMPORTANT NOTIFICATION

International application No.

PCT/US99/13488

International filing date (day/month/year)

15 JUNE 1999

Priority Date (day/month/year)

15 JUNE 1998

Applicant

ASCOM HASLER MAILING SYSTEMS, INC.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

E TODD VOELTZ

Telephone No. (703) 308-3900

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 8001.103/10	<div style="display: flex; justify-content: space-between;"> <div>FOR FURTHER ACTION</div> <div>See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)</div> </div>	
International application No. PCT/US99/13488	International filing date (day/month/year) 15 JUNE 1999	Priority date (day/month/year) 15 JUNE 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): G06F 17/00 and US Cl.: 705/401		
Applicant ASCOM HASLER MAILING SYSTEMS, INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets.
 

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  30 DECEMBER 1999	Date of completion of this report  16 MARCH 2000
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer <i>F. E. Voeltz</i> E TODD VOELTZ
Facsimile No. (703) 305-3230	Telephone No. (703) 308-3900

**I. Basis of the report****1. With regard to the elements of the international application: \***

- ☒ the international application as originally filed
- ☒ the description:  
pages 1-38, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages 39-51, as originally filed  
pages NONE, as amended (together with any statement) under Article 19  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the drawings:  
pages 1-11, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the sequence listing part of the description:  
pages NONE, as originally filed  
pages NONE, filed with the demand  
pages NONE, filed with the letter of \_\_\_\_\_

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**4. ☒ The amendments have resulted in the cancellation of:**

- ☒ the description, pages none
- ☒ the claims, Nos. none
- ☒ the drawings, sheets/fig none

**5. ☒ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

*\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

*\*\*Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. statement**

Novelty (N)	Claims <u>1-72</u>	YES
	Claims <u>none</u>	NO
Inventive Step (IS)	Claims <u>1-72</u>	YES
	Claims <u>none</u>	NO
Industrial Applicability (IA)	Claims <u>1-72</u>	YES
	Claims <u>none</u>	NO

**2. citations and explanations (Rule 70.7)**

The references in the prior art are insufficient datewise to overcome the claims in the instant case.

Claims 1-12 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a franking system comprising:

a processing unit for verifying at least part of the authorization code to detect any change in the software component before the at least one postage indicium is generated,  
in combination with all the limitations of Claim 1.

Claims 13-20 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a franking system comprising a processing unit for verifying at least part of the authorization code before the at least one postage indicium is generated to detect any change in the configuration of the franking system,  
in combination with all the limitations of claim 13.

Claims 21-27 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a franking system for generation of postage indicia, the system having a plurality of feature options which may be enabled, the system comprising:

a device for receiving an authorization code which is generated outside the system in response to a request for a selected setting of the feature options different from a current setting thereof, the authorization code comprising a code segment and a data segment, the code segment being derived from at least information concerning the selected setting of the feature options, the data segment containing data concerning one or more of the feature options,

a processing unit for verifying the code segment to determine whether generation of postage indicia based on the selected setting of the feature options is allowed,

in combination with all the limitations of claim 21.

Claims 28-31 meet the criteria set out in PCT Article 33(2)-(4). (Continued on Supplemental Sheet.)

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Sheet 10

Continuation of: Boxes I - VIII

**I. BASIS OF REPORT:**

5. (Some) amendments are considered to go beyond the disclosure as filed:  
NONE

**V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):**

because the prior art does not teach or fairly suggest a franking system comprising:  
a processing unit for determining whether one of the plurality of identifiers corresponds to the selected identifier in the second software component when the second software component interacts with the first software component, the at least one postage indicium being realized only when one of the plurality of identifiers corresponds to the selected identifier,  
in combination with all the limitations of claim 28.

Claims 32-37 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a system for reconfiguring a franking apparatus for generating postage indicia, the franking apparatus including a device for maintaining a postage fund for postage dispensation in the franking apparatus, the system comprising:  
a processor for reconfiguring the franking apparatus, a reconfiguration of the franking apparatus incurring a cost, the value of the account being adjusted to account for the cost, the value of the postage fund in the franking apparatus being unaffected by the reconfiguration,  
in combination with all the limitations of claim 32.

Claims 38-49 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a method for use in a franking system comprising:  
receiving an authorization code which is derived from at least information concerning the software component,  
verifying at least part of the authorization code to detect any change in the software component before the at least one postage indicium is generated,  
in combination with all the limitations of claim 38.

Claims 50-56 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a method for use in a franking system comprising:  
storing an authorization code which is derived from at least information concerning a configuration of the system,  
verifying at least part of the authorization code before the at least one postage indicium is generated to detect any change in the configuration of the franking system,  
in combination with all the limitations of claim 50.

Claims 57-63 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a method for use in a franking system for generation of postage indicia, the system having a plurality of feature options which may be enabled, the method comprising:  
receiving an authorization code which is generated outside the system in response to a request for a selected setting of the feature options different from a current setting thereof, the authorization code comprising a code segment and a data segment, the code segment being derived from at least information concerning the selected setting of the feature options, the data segment containing data concerning one or more of the feature options,  
verifying the code segment to determine whether generation of postage indicia based on the selected setting of the feature options is allowed,  
in combination with all the limitations of claim 57.

Claims 64-66 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a method for use in a franking system comprising:  
determining whether one of the plurality of identifiers corresponds to the selected identifier in the second software component when the second software component interacts with the first software component,  
in combination with all the limitations of claim 64.

Claims 67-72 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a method for reconfiguring a franking apparatus for generating postage indicia, the franking apparatus including a device for maintaining a postage fund for postage dispensation in the franking apparatus comprising:  
storing a value of an account for replenishing the postage fund in the franking apparatus,  
adjusting the value of the account to account for the cost, the value of the postage fund in the franking apparatus being unaffected by the reconfiguration.

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 11

in combination with all the limitations of claim 67.

----- NEW CITATIONS -----

NONE



# PCT REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office Use Only

International Application No.
International Filing Date
Name of receiving Office and "PCT International Application"
Applicant's or agent's file reference (if desired) (12 characters maximum)

8001.103/10

## Box No. I TITLE OF INVENTION

Technique for Securing a System Configuration of a Postage Franking System

## Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Ascom Hasler Mailing Systems, Inc.  
19 Forest Parkway  
P.O. Box 858  
Shelton, Connecticut 06484-0904  
United States of America

☐ This person is also inventor.

Telephone No. (203) 926-1087

Facsimile No.

Teleprinter No.

State (i.e. country) of nationality: US

State (i.e. country) of residence: US

This person is applicant ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

## Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Schwartz, Robert G.  
191 Linden Avenue  
Branford, Connecticut 06405  
United States of America

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality: US

State (i.e. country) of residence: US

This person is applicant ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet

## Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include code and name of country)

YIP, Alex L.  
LONDA AND TRAUB LLP  
20 Exchange Place, 37th Floor  
New York, New York 10005  
United States of America

Telephone No. (212) 968-1300

Facsimile No.: (212) 968-1307

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

*If none of the following sub-boxes is used, this sheet is not to be included in the request.*

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Brookner, George G.  
11 Surrey Drive  
Norwalk, Connecticut 06851  
United States of America

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality: US

State (i.e. country) of residence: US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Eskandari, Fetneh  
166 Dove Lane  
Middletown, Connecticut 06457  
United States of America

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality: Iran

State (i.e. country) of residence: US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Crowe, Allen A.  
76 Klein Drive  
Prospect, Connecticut 06712  
United States of America

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality: US

State (i.e. country) of residence: US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Simcik, Mark E.  
141 Park Avenue  
Bloomfield, Connecticut 06002  
United States of America

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality: US

State (i.e. country) of residence: US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

**Box No. V DESIGNATION OF STATES**

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

**Regional Patent**

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- ☐ **EA** Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT.
- ☒ **EP** European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ **OA** OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Cote d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify)

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<input type="checkbox"/> <b>BG</b> Bulgaria	<input type="checkbox"/> <b>MN</b> Mongolia
<input type="checkbox"/> <b>BR</b> Brazil	<input type="checkbox"/> <b>MW</b> Malawi
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<input type="checkbox"/> <b>ES</b> Spain	<input type="checkbox"/> <b>SG</b> Singapore
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<input type="checkbox"/> <b>GW</b> Guinea-Bissau	<input type="checkbox"/> <b>TR</b> Turkey
<input type="checkbox"/> <b>HR</b> Croatia	<input type="checkbox"/> <b>TT</b> Trinidad and Tobago
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<input type="checkbox"/> <b>IS</b> Iceland	<input checked="" type="checkbox"/> <b>US</b> United States of America <u>Continuation-in-part</u>
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<input type="checkbox"/> <b>KG</b> Kyrgyzstan	<input type="checkbox"/> <b>YU</b> Yugoslavia
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<input type="checkbox"/> <b>KZ</b> Kazakhstan	
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Check-boxes reserved for designating States (for the purpose of a national patent) which have become party to the PCT after issuance of sheet

☐

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation of fees. Confirmation must read the receiving office within the 15-month time limit.)

Supplemental Box <i>If the Supplemental Box is not used, this sheet need not be included in the request</i>	
<p><b>1. If, in any of the Boxes, the space is insufficient to furnish all the information:</b></p> <p><i>in particular:</i></p> <p>(i) if more than two persons are involved as applicants and/or inventors and no "continuation sheet" is available:</p> <p>(ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked:</p> <p>(iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America:</p> <p>(iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents:</p> <p>(v) if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition" or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "Continuation" or "Continuation-in-part":</p> <p>(vi) if there are more than three earlier applications whose priority is claimed:</p> <p><b>2. If the applicant claims, in respect of any designated Office, the benefits of provisions of the national law concerning non-prejudicial disclosures or exceptions to lack of novelty:</b></p>	<p><i>in such case, write "Continuation of Box No. ... " [indicate the number of the Box] and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient</i></p> <p><i>in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below:</i></p> <p><i>in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant:</i></p> <p><i>in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor:</i></p> <p><i>in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV.</i></p> <p><i>in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title, or parent application and the date of grant of the parent title or filing of the parent application:</i></p> <p><i>in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI.</i></p> <p><i>in such case, write "Statement Concerning Non-Prejudicial Disclosures or Exceptions to Lack of Novelty" and furnish that statement below.</i></p>

Continuation of Box No. V

United States of America: 08/485,269; 7 June 1995 (07.06.95)

**Box No. VI PRIORITY CLAIM**

Further priority claims are indicated in the Supplemental Box [ ]

Filing Date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving Office
item (1) 15 June 1998 (15.06.98)	60/089,212	United States		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)

\*Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box

**Box No. VII INTERNATIONAL SEARCHING AUTHORITY**

**Choice of International Searching Authority (ISA)**  
(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen: the two-letter code may be used):  
**ISA / US**

**Request to use results of earlier search:** reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):  
Date (day/month/year)      Number      Country (or regional Office)

**Box No. VIII CHECK LIST: LANGUAGE OF FILING**

This international application contains the following number of sheets:

request : 5  
description (excluding sequence listing part) : 38  
claims : 13  
abstract : 1  
drawings : 13  
sequence listing part of description : \_\_\_\_\_

Total number of sheets : 70

This international application is accompanied by the item(s) marked below:

1. ☒ fee calculation sheet
2. ☐ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological material
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☒ other (specify): check in the amount of \$2,215.00

Figure of the drawings which should accompany the abstract: 1

Language of filing of the international application:

**Box No. IX SIGNATURE OF APPLICANT OR AGENT**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

By Alex L. Yip  
Yip, Alex L.  
Attorney/Agent  
Reg.No. 34,759

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1. Date of actual receipt of the purported International Application:	2. Drawings ____ received:  ____ not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority specified by the application: (if two or more are competent): <b>ISA/</b>	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid

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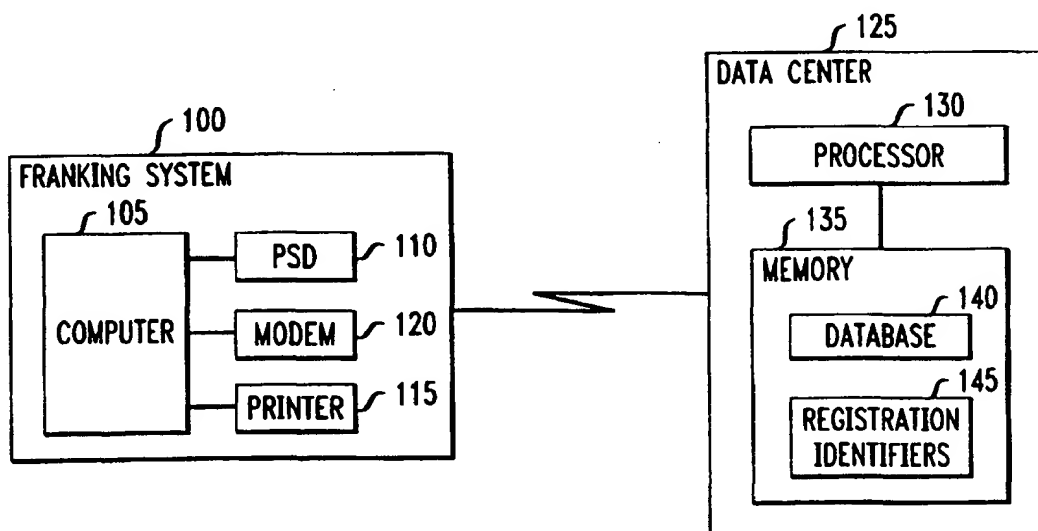
WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>G06F 17/00</b>		A1	(11) International Publication Number: <b>WO 99/66422</b>
			(43) International Publication Date: 23 December 1999 (23.12.99)
(21) International Application Number: <b>PCT/US99/13488</b>		(74) Agent: YIP, Alex, L.; Londa & Traub LLP, 37th floor, 20 Exchange Place, New York, NY 10005 (US).	
(22) International Filing Date: 15 June 1999 (15.06.99)			
(30) Priority Data: 60/089,212 15 June 1998 (15.06.98) US		(81) Designated States: CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 08/485,269 (CIP) Filed on 7 June 1995 (07.06.95)		Published With international search report.	
(71) Applicant (for all designated States except US): ASCOM HASLER MAILING SYSTEMS, INC. [US/US]; 19 Forest Parkway, P.O. Box 858, Shelton, CT 06484-0904 (US).			
(72) Inventors; and			
(75) Inventors/Applicants (for US only): SCHWARTZ, Robert, G. [US/US]; 191 Linden Avenue, Branford, CT 06405 (US); BROOKNER, George, M. [US/US]; 11 Surrey Drive, Norwalk, CT 06851 (US); ESKANDARI, Fetneh [IR/US]; 144 Dove Lane, Middletown, CT 06457 (US); CROWE, Allen, A. [US/US]; 76 Klein Drive, Prospect, CT 06712 (US); SMCIK, Mark, E. [US/US]; 141 Park Avenue, Bloomfield, CT 06002 (US).			

(54) Title: TECHNIQUE FOR SECURING A SYSTEM CONFIGURATION OF A POSTAGE FRANKING SYSTEM



(57) Abstract

In a franking system a postal security device (PSD) tracks a postage fund for dispensing postal indicia and enforce the configuration of the franking system. An authorization code, which is particular to the system, is used to verify the system configuration. An unauthorized change in the system configuration causes invalidation of the code and generation of the postal indicia is denied. Data center (125) records configuration information of each franking system (100). The data center generates a valid authorization code for verification in the franking system based on new configuration information. Components added to the system must be preapproved to prevent fraudulent generation of postage indicia. A registration number is assigned to each preapproved component which is necessary for interaction with the franking system.

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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Description

TECHNIQUE FOR SECURING A SYSTEM  
CONFIGURATION OF A POSTAGE FRANKING SYSTEM

Technical Field

The invention relates to a secure system configuration technique, and more particularly to a  
5 technique for protecting the integrity of components in a postage franking system.

Background of the Invention

It is commonplace to use postage meters or franking systems for generating postage indicia on  
10 mailpieces. The format of the postage indicia is specified by a postal authority to facilitate its inspection. In the United States, much attention has been focused on an Information-Based Indicia Program (IBIP) by the United States Postal Service (USPS),  
15 proposing, among other things, new requirements for the format of a postage indicium. Such new requirements were promulgated, e.g., in the "Information Based Indicia Program (IBIP) Open System Indicium Specification," dated August 19, 1998. For instance, the IBIP requires  
20 inclusion of a 2-dimensional (2-D) barcode in the postage indicium. Such a barcode represents postal information including postage, and a digital signature for authenticating the postal information, in accordance with a public key algorithm. One such public key algorithm  
25 may be the Digital Signature Algorithm (DSA) described,



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e.g., in "Digital Signature Standard (DSS)," FIPS PUB 186, May 19, 1994.

In addition, under the IBIP, the requirements of a postal security device (PSD) supporting the creation of the postage indicium are specified, e.g., in the  
5 "Information Based Indicia Program (IBIP) Open System Postal Security Device (PSD) Specification," dated August 19, 1998. In accordance with the IBIP requirements, the PSD provides the aforementioned digital signature in the  
10 postage indicium, and dispenses and accounts for a postal fund stored therein in a secure manner.

With the advent of sophisticated and widely available general purpose computers, e.g., personal computers (PCs), it has become possible to use one such  
15 computer, by installing an appropriate postage generation program therein, to print postage indicia on a printer. Thus, a franking system may comprise a PC, and a PSD and printer serving as peripherals thereto, in accordance with an "open system" configuration. An advantage of  
20 adopting the open system configuration is that other mailing application software may also be installed by the user in the same PC to effectively generate mailpieces along with the postage indicia. For example, such mailing application software may include a billing  
25 program for charging postage back to different accounts, an envelope program for printing an address and a postage indicium on an envelope, an address cleansing program for correcting mailing addresses, etc.

However, the user of a franking system based on  
30 the open system configuration has full access to the hardware and software components in the system. As a result, these components including the aforementioned postage generation program are subject to tampering, and

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fraudulent manipulation to generate unauthorized postage indicia.

### Summary Of the Invention

5           In accordance with the invention, an authorization code is used to secure the configuration of a franking system. The authorization code is derived in part from system configuration information concerning, e.g., the enabled and disabled feature options, current  
10   version number of software, and the identity of a computer in the franking system (e.g., the serial number of the computer). Any unauthorized change in the system configuration results in an invalidation of the authorization code in the franking system, and denial of  
15   the franking operation. Thus, any system reconfiguration, e.g., a change in the feature options or software upgrade, must be effected using a new valid authorization code. Preferably, the authorization code verification is performed each time before the franking  
20   operation starts to forestall any fraudulent generation of postage indicia.

          In accordance with an aspect of the invention, software code, e.g., the object code of a postage generation program, in the franking system is subject to  
25   error checking thereof. Thus, the above authorization code is also derived from error checking information, e.g., cyclic redundancy check (CRC) bits or checksum of the software code. Any tampering of the software also results in an invalidation of the authorization code.

30           In addition, to minimize the risk of fraudulent generation of postage indicia, franking-related software and hardware components by, e.g., third party vendors,

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need to go through a pre-approval process before they are installed in the franking system to participate in the franking operation. For instance, in the pre-approval process, the components need to pass standardized tests to meet certain minimum requirements in, e.g., tamper resistance. In accordance with yet another aspect of the invention, a pre-approved software component is afforded a registration identifier which is necessary for the software component to participate in the franking operation. For example, the registration identifier needs to be produced for verification each time when the software component interacts with the aforementioned postage generation program. Similarly, a pre-approved hardware component is afforded a registration identifier which is necessary for its utility software to participate in the franking operation.

It is an object of the invention to control the configurations of the franking systems in the field. To that end, a data center keeps records of the latest configurations of the franking systems served by the data center, including the identities of the franking-related components in the respective systems. Such records can be used to control the configuration of each franking system. For example, with such records, the data center can generate the aforementioned authorization code for verification in each franking system to enforce its configuration.

It is another object of the invention to effectively conduct online transactions using postage funds. To that end, the aforementioned data center also keeps a customer account for replenishing a postage fund in each franking system. For example, software or a feature option for the franking system may be purchased

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through a communication connection with the data center. Such an online transaction involves the data center's downloading the software to, or enabling the feature option of, the franking system through the communication connection, with the price of the software or feature option debited from its customer account in the data center.

#### Brief Description of the Drawing

10 Further objects, features and advantages of the invention will become apparent from the following detailed description taken in conjunction with the accompanying figures showing illustrative embodiments of the invention, in which:

15 Fig. 1 illustrates a franking system which is capable of communicating with a remote data center in accordance with the invention;

Fig. 2 illustrates the format of each record in a database in the remote data center;

20 Fig. 3 is a block diagram of a postal security device used in the franking system;

Fig. 4 is a flow chart depicting the steps of a postage generation program used in the franking system;

25 Fig. 5 illustrates a postage indicium generated by the postage generation program;

Fig. 6 illustrates an authorization code which needs to be verified in reconfiguring the franking system;

30 Fig. 7 is a flow chart depicting the steps taken by the franking system to verify the authorization code;

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Figs. 8A and 8B jointly illustrate a process whereby the franking system can be remotely reconfigured through a communications connection;

Fig. 9 shows a variation of the design of the authorization code;

Fig. 10 illustrates a memory map of storage of feature option values;

Fig. 11 illustrates a process for generating the authorization code of Fig. 9 in changing a feature option in the franking system;

Fig. 12 illustrates a process for changing the feature option in the franking system using the authorization code of Fig. 9;

Fig. 13 illustrates a second process for changing the feature option in the franking system using the authorization code of Fig. 9;

Fig. 14 illustrates a memory map of storage of software version numbers;

Fig. 15 illustrates a process for updating a software version number in the franking system; and

Figs. 16A, 16B and 16C jointly illustrate a process for printing addresses and a postage indicium on an envelope using pre-approved components in the franking system.

#### Detailed Description

Fig. 1 illustrates franking system 100 embodying the principles of the invention for realizing mailing applications and generating postage indicia on mailpieces. In this particular illustrative embodiment, system 100 is configured as an open system, where computer 105 may be a conventional personal computer (PC)

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serving as a host device, and where PSD 110, printer 115 and modem 120 are peripherals to computer 105.

Alternatively, computer 105 may be a workstation or any other general purpose computing machine. Computer 105

5 may cause modem 120 to establish a communication connection through a communications network to, say, remote data center 125. Although modem 120 in this instance is shown as an external modem, it will be appreciated that any internal modem within computer 105  
10 may be used, instead.

Data center 125 includes processor 130 which, among other things, maintains database 140 and registration identifiers 145 stored in memory 135 to serve different franking systems, e.g., franking system  
15 100, communicates therewith to replenish their postage funds, and provides authorization codes to control their configurations in accordance with the invention.

Database 140 contains records concerning the respective franking systems served by data center 125.  
20 Fig. 2 illustrates the format of each record in database 140. In this instance, each franking system is identified by a PSD serial number in field 161 pre-assigned to its PSD. Field 163 contains account information such as a prefunded or credit escrow account  
25 balance for the franking system for conducting a telemeter setting (TMS) transaction described below. Field 165 includes configuration information (described below) concerning the configuration of the franking system to protect its integrity in accordance with the  
30 invention.

Fig. 3 illustrates PSD 110 which in this instance is realized as an integrated circuit (IC) module peripheral to computer 105. PSD 110 comprises secure

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memory 200, processing unit 210 including one or more processors, and communications interface 220 (realizable as PCMCIA, serial or parallel interface) for interfacing with and insertion into a corresponding mating port (not shown) in computer 105.

Secure memory 200 is a nonvolatile memory which includes, among others, ascending register 230 and descending register 235. Ascending register 230 is used to keep track of an amount of postage dispensed. On the other hand, descending register 235 is used to keep track of the postage fund amount available for postage dispensation. When the value of descending register 235 decreases over time below a predetermined limit, computer 105 can no longer dispense postage until descending register 235 is reset. Such a reset may be achieved by way of electronic funds transfer, in accordance with a well-known TMS technique, via a communication connection (e.g., a dial-up connection or an Internet connection) to data center 125 through modem 120.

Using the TMS technique in this instance, the user need not carry PSD 110 to a postal authority for authorized resetting of descending register 235. To initiate a TMS process on computer 105, the user needs to meet certain access requirements. For example, the user may be required to enter a password, key, or biometric input (e.g., fingerprint) on computer 105 using an appropriate input device attached to computer 105. Verification of such an access entry ensures that the user is authorized to conduct such a process. After the access entry is verified, computer 105 initiates a call through modem 120 (alternatively via the Internet) to data center 125, requesting additional postage funds. Upon receipt of the call, processor 130 verifies in a

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well known manner the current ascending and descending register values and other PSD data in secure memory 200 of PSD 110, and ascertains the availability of funds in the prefunded or credit escrow account of system 100.

5 After the PSD data is validated and the account balance is found to be sufficient, processor 130 debits the account and remotely resets descending register 235 in PSD 110 accordingly.

System 100 in this instance may be used to  
10 generate postage indicia in accordance with the United States Postal Service (USPS) Information Based Indicia Program (IBIP) specification, namely, the "Information Based Indicia Program (IBIP) Open System Indicum Specification," dated August 19, 1998. To that end,  
15 secure memory 200 also includes a well-known digital signature algorithm (DSA) described, e.g., in "Digital Signature Standard (DSS)," FIPS PUB 186, May 19, 1994; and a private key and the corresponding public key in accordance with the DSA. The public key may be made  
20 available to the public in a PSD certificate in the postage indicia. For instance, using the DSA, unit 210 may sign specified postal data with an associated private key to generate a different digital signature to be included in each postage indicium. The postal authority  
25 then scans the postage indicium and verifies the digital signature to authenticate the postage indicium, in accordance with the DSA. It should be noted that instead of the DSA of the DSS, another well-known data authentication algorithm such as the RSA or Elliptic  
30 Curve algorithm may be used.

For postage franking operation, computer 105 is loaded with software components including postage generation program 300 for generating postage indicia.



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Fig. 4 illustrates program 300 stored in a memory (not shown) in computer 105. Instructed by program 300, computer 105 prompts the user to enter mailing information concerning the destination zip code, weight, mail class (or rate category), any special services, etc., of a mailpiece to be mailed, as indicated at step 305. Assuming in this instance that a rate module is pre-installed in computer 105 which provides postage rate information, computer 105 at step 310 calculates the required postage based on the user entries and postage rate information. Otherwise, the user would be prompted to enter the required postage value for mailing the mailpiece. At step 313, computer 105 sends the data concerning the mail class and postage value to PSD 110. Instructed by a subroutine of program 300, unit 210 in PSD 110 deducts the required postage value from the available postal fund in descending register 235, and accordingly adds same to the dispensed fund in ascending register 230 to account for the transaction, as indicated at step 315. At step 317, unit 210 in accordance with the DSA of the DSS signs postal data concerning the mail class, postage value, ascending and descending register values, and date of mailing, together with other data pre-stored in memory 200 such as the software ID identifying program 300, device ID identifying PSD 110, and licensing zip code, resulting in a digital signature for authenticating the postage indicium to be generated. At step 320, computer 105 receives from PSD 110 the digital signature, ascending and descending register values, etc. At step 325, computer 105 prepares a print image of a postage indicium representing the required postal data and digital signature. Alternatively, unit 210 itself may create the print image of the postage

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indicium and pass it onto computer 105. Upon receiving a print command, computer 105 transmits the print image to printer 115, which then prints the postage indicium on a label or an envelope fed to printer 115.

5           Fig. 5 illustrates one such postage indicium 500 which serves as proof of postage payment. Indicium 500 includes human readable portion 555 and machine readable portion 560. Portion 555 may include, e.g., the date of mailing, postage, device ID, originating town and  
10   zip code, mail class, etc. Machine readable portion 560, which is readable using an optical scanner, may include a 2-dimensional barcode representing data concerning the device ID, ascending and descending register values, postage value, digital signature, date of mailing,  
15   licensing zip code, software ID, PSD certificate, mail class, etc. Alternatively, machine readable portion 560 may comprise one or more data matrix symbols representing similar data, as described in PCT International Publication No. WO 99/16023, published on April 1, 1999.

20           Because of the open system configuration of franking system 100, the user has full access to hardware and software components in system 100. As a result, these components, e.g., postage generation program 300 described above, are subject to tampering and  
25   unauthorized use. In accordance with the invention, verification of an authorization code is required from time to time to prevent tampering and unauthorized use of the components of system 100.

30           Fig. 6 illustrates one such authorization code 600 used to prevent any tampering and unauthorized use of postage generation program 300 described above, and feature options available in system 100 which may include, e.g., a label printing option and other printer

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options, a barcode scanner option, etc. System 100 is pre-loaded with software components necessary for providing these options. A valid authorization code, which is unique to system 100, needs to be entered onto system 100 in order to install or upgrade the code of program 300, and/or enable new feature options selected by the user. In response to a user request for a system reconfiguration involving the program code and/or feature options, authorization code 600 is generated by processor 130 in data center 125 and then provided either to the user via facsimile, email, telephone, etc., for the user to enter onto system 100 using, e.g., a keyboard attached to computer 105, or to system 100 directly via the aforementioned communication connection between data center 125 and system 100. As shown in Fig. 6, authorization code 600 consists of m-bit electronic signature 605 and n-bit encrypted option segment 610, where m and n are predetermined integers. To generate electronic signature 605, for example, a combination of (a) the identity of computer 105, which in this instance is the serial number of computer 105, (b) the hardware configuration identifier of computer 105, e.g., indicative of the type of processor and RAM capacity in computer 105, (c) the serial number of PSD 110, (d) the software version number of program 300, (e) error checking information, e.g., in this instance cyclic redundancy check (CRC) bits, resulting from performing a CRC on the code of program 300, and (f) an option number whose bit pattern corresponds to a particular combination of the enabled and disabled feature options for the postage franking operation. Item (c) is provided in field 161, and items (a), (b), and (d) through (f) are

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provided in field 165 of the record pertaining to system 100 in database 140.

It should be noted at this point that item (e) in this instance is obtained by running a well known CRC algorithm, e.g., Reed Solomon CRC algorithm, on the  
5 object code of program 300 which is authorized in system 100. Alternatively, a checksum derived in a conventional manner from the object code may be used.

The derivation by processor 130 of electronic  
10 signature 605 involves encrypting the combination of items (a) through (f) in accordance with a first well known encryption algorithm. Signature 605 is then derived from the encrypted version of the combination of the items, e.g., by extracting therefrom a predetermined  
15 sequence of m bits. Alternatively, signature 605 may be generated using a well known symmetric or asymmetric key cryptographic methodology.

On the other hand, encrypted option segment 610 is generated by encrypting only the option number (f) in  
20 accordance with a second well known encryption algorithm. Alternatively, segment 610 may be unencrypted, i.e., containing the plain text of option number (f).

It suffices to know for now that after system 100 enters a reconfiguration mode where authorization  
25 code 600 is entered, code 600 is stored in authorization code buffer 241. Encrypted option segment 610 of code 600 is subsequently decrypted to recover the underlying option number. Using the recovered option number (f) and additional items in system 100 which are identical to  
30 aforementioned items (a) through (e), and the same first encryption algorithm in the above-described manner, system 100 is capable of independently generating an electronic signature identical to electronic signature

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605 of code 600. In any event, the generated signature is compared with electronic signature 605 in buffer 241. If the two signatures match, the authorization code is declared valid. Otherwise, if they do not match, the  
5 franking operation by system 100 is suspended.

It should be noted at this point that the authorization code verification requirement is desirable in that it helps deter unauthorized copying of software in system 100, e.g., program 300, onto other similar  
10 systems. This stems from the fact that even though the software can be copied onto the similar systems, the latter would not be able to perform the franking operation without proper authorization codes, which need to be derived in part from their respective unique  
15 computer and PSD serial numbers. In addition, because authorization code 600 is partly derived from aforementioned item (e), tampering of the software is prevented as any such tampering results in a deviation from the valid CRC bit values, causing invalidation of  
20 the authorization code. Moreover, since system 100 would only be able to perform franking operation with a proper authorization code, which specifies a valid combination of software and hardware components, and feature options in system 100, the authorization code verification  
25 requirement thus enables data center 125 to control the configuration of each franking system served thereby.

As mentioned before, each bit of the option number (f) corresponds to a feature option of franking system 100. Each option, which is initially disabled,  
30 may be selectively enabled by setting the appropriate bits of the option number (f) to the opposite value. Thus, for example, if a user wants to enable a previously disabled label printing option, a proper authorization

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code needs to be entered on system 100 while in a reconfiguration mode, causing the bit in the option number (f) corresponding to the label printing option to change to the opposite value to enable the option.

5 System 100 effects the feature options according to the bit pattern of the option number stored in option number buffer 243 in memory 200. In this particular illustrative embodiment, the recovered option number from decrypting segment 610 of authorization code 600  
10 overwrites the current option number in buffer 243 irrespective of the outcome of the validation of authorization number 600. That is, system 100 immediately effects the feature options according to the recovered option number as soon as it is placed in buffer  
15 243, irrespective of the outcome of the validation.

After the feature options are effected in the prescribed manner in the reconfiguration mode, system 100 returns to a normal operation mode. When postage generation program 300 is invoked to perform the franking  
20 operation in the normal operation mode, unit 210 reads from memory 200 (i) the serial number of computer 105, (ii) the hardware configuration identifier of computer 105, (iii) the serial number of PSD 110, and (iv) the software version number of program 300, which are  
25 collected by unit 210 and stored in memory 200. Unit 210 also obtains (v) CRC bits based on running the aforementioned CRC algorithm on the latest code of program 300 in system 100, and (vi) the option number from buffer 243. Unit 210 independently generates an  
30 electronic signature using items (i) through (vi) and the aforementioned first encryption algorithm in a similar manner to processor 130 generating electronic signature 605 in data center 125. The electronic signature, thus

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generated, is compared with the electronic signature stored in buffer 241, i.e., the first m bits of authorization code 600 therein. If there is no mismatch, generation of postage indicia using program 300 is allowed. Otherwise if there is any mismatch, a message such as "Invalid Authorization Code" is displayed on computer 105, and generation of postage indicia is halted.

Where authorization code 600 is entered by user onto system 100, in view of the possibility that the user makes an erroneous authorization code entry, the user is afforded a limited number of times to re-enter the correct authorization code after the message is displayed. After the limited number of times is exhausted, proper resetting of system 100 by authorized personnel is needed to re-enable the system to perform the franking operation.

For installing or upgrading a software component, e.g., the code of postage generation program 300, the user may be provided with a compact disk (CD), or another conventional storage medium, e.g., a floppy disk, IC module, digital video disk (DVD), etc., containing the necessary software, and authorization code 600 on the storage medium package which is generated in data center 125 for verification after the software installation or upgrade. The new software version number of program 300 may be embedded in the header of the program. When the software installation or upgrade is performed, the new software version number is read by computer 105 and transferred to memory 200 where the new software version number replaces the current software version number (iv).

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After the software installation or upgrade in the reconfiguration mode, system 100 returns to the normal operation mode. When postage generation program 300 is invoked to perform the franking operation in the normal operation mode, the user is prompted for authorization code 600 on the storage medium package. Authorization code 600 is then verified according to the steps similar to those in the above-described verification after effecting new feature options.

Specifically, unit 210 stores in buffer 241 authorization code 600 entered by the user, as indicated at step 701 in Fig. 7. At step 702, unit 210 causes the decryption of encrypted option segment 610 of authorization code 600 in buffer 241, thereby recovering the underlying option number (vi). Such decryption is accomplished using a decryption algorithm inverse to the second encryption algorithm. At step 703, processor 201 stores the recovered option number in buffer 243, although in this instance the recovered option number is identical to current option number in buffer 243. At step 704, unit 210 runs the CRC algorithm on the latest code of postage generation program 300, thereby obtaining item (v). At step 705, unit 210 reads the above items (i) through (iv) from memory 200, where item (iv) has the latest software version number of program 300. At step 706, unit 210 independently generates an electronic signature using items (i) through (vi), and the first encryption algorithm in a similar manner to processor 130 generating electronic signature 605 in data center 125. Unit 210 at step 707 compares the generated electronic signature with electronic signature 605 of authorization code 600 in buffer 241. The authorization code is validated if unit 210 finds that the two electronic signatures match.



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Otherwise, a message such as "Invalid Authorization Code" is displayed on computer 105, and generation of postage indicia is halted.

It should be noted that the above authorization code verification is performed not only after system 100 is reconfigured, but preferably each time, or from time to time, when postage generation program 300 is invoked in the normal operation mode. Thus, preferably each time, or from time to time, before the franking operation is initiated, processor 201 performs above steps 702 through 707 for fear that the components of franking system 100 are tampered in the meantime.

It should also be noted that the above authorization code verification may also be performed via direct communications between data center 125 and franking system 100, thereby obviating the need of having the user enter the authorization code. Figs. 8A and 8B jointly illustrate remote reconfiguration process 800 whereby a user can purchase a new feature option or software online, and whereby authorization code 600 is verified via direct communications between data center 125 and system 100. Process 800 may be invoked by the user's entering a specified command on computer 105. Similar to the above-described TMS process for requesting additional postage, process 800 starts with prompting the user for an access entry (e.g., a password, key or biometric input) on computer 105, as indicated at step 806 in Fig. 8A. Verification of such an access entry ensures that the user is authorized to conduct the remote reconfiguration process. After the access entry is verified at step 809, computer 105 at step 812 establishes a communication connection with data center 125 via modem 120. Through the established connection,

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processor 130 in data center 125 performs initial handshaking with franking system 100 according to a pre-agreed upon communication protocol, thereby identifying at step 815 franking system 100, e.g., by its PSD serial number. Based on the PSD serial number, processor 130 at step 818 locates in database 140 the record pertaining to franking system 100.

At step 821, processor 130 reviews fields 163 and 165 of the located record for the current escrow account balance and configuration information of system 100, respectively. Based on the current configuration of system 100, processor 130 at step 824 causes computer 105 to display a menu thereon containing selections of any new software available for downloading, and currently disabled options for activation. The menu also indicates the current escrow account or credit balance, the prices for downloading any new software having a new version number, and for activating one or more of the disabled options. Assuming that in this example the user wants to activate a previously disabled option, say, option A in the menu, the user may use a mouse device (not shown) attached to computer 105 to select option A.

At step 827, computer 105 communicates the user's selection of option A to processor 130. Upon receiving the option selection, processor 130 at step 830 debits the price of option A from the current escrow account balance, resulting in a new balance in field 163. Accordingly, processor 130 at step 833 changes the value of the bit in the option number (f) in field 165 corresponding to option A, reflecting an activation of option A. At step 836, processor 130 generates authorization code 600 consisting of electronic signature 605 and encrypted option segment 610. As mentioned

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before, electronic signature 605 is derived from an encrypted version of items (a) through (f) in field 165 of the record pertaining to system 100. Encrypted option segment 610 is obtained by encrypting the option number (f) alone. Authorization code 600 is then transmitted from data center 125 to system 100 through the established communication connection, as indicated at step 839. The communication connection is thereafter terminated.

10           The remaining steps in process 800 are similar to those in routine 700 described before. Specifically, similar to step 701, step 841 in Fig. 8B involves storing received authorization code in buffer 241. Similar to step 702, step 843 involves decryption of encrypted option segment 610 of authorization code 600 to recover the underlying option number (vi), which in this instance indicates the activation status of option A. Similar to step 703, step 845 involves storing the recovered option number in buffer 243, thereby activating option A.

15           Similar to step 704, step 847 involves running the CRC algorithm on the latest code of postage generation program 300, thereby obtaining item (v). Similar to step 705, step 849 involves reading items (i) through (iv) from memory 200. Similar to step 706, step 851 involves independently generating an electronic signature using items (i) through (vi), and the first encryption algorithm. Similar to step 707, step 853 involves comparing the generated electronic signature with electronic signature 605 of authorization code 600 in buffer 241. Again, the authorization code is validated if unit 210 finds that the two electronic signatures match. Otherwise, an "Invalid Authorization Code" message would be displayed on computer 105, and

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generation of postage indicia would be halted as described before.

Based on the disclosure heretofore, it is apparent to a person skilled in the art that where the user chooses to purchase new software online, instead, the steps in process 800 similarly follow, except that in that case, at step 839 the new software, including the new software version number therein, would be downloaded from data center 125 to system 100, along with the transmission of authorization code 600 thereto.

Variations of the design of the authorization code which call for different verification techniques will now be described. In accordance with a first design variation, the authorization code is generated by encrypting items (a) through (f) using a standard encryption algorithm in data center 125. After such an authorization code is provided to system 100, the latter decrypts the received authorization code using a decryption algorithm inverse to the standard encryption algorithm, thereby recovering the underlying items (a) through (f). Items (i) through (v) are then obtain in system 100 in the manner described before, and compares them with the corresponding, recovered items (a) through (e). The authorization code is validated if the two sets of items match.

If the authorization code of the first design variation is not validated because of certain mismatched items, it may be desirable to show on computer 125 such mismatched items for diagnostic purposes. For example, if it is shown that item (d) does not match item (iv), a wrong software version of program 300 may have been installed in system 100. It may be a manufacturing

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defect if the authorization code invalidation occurs during the very first time of the franking operation.

Fig. 9 illustrates a second variation of the authorization code design. In accordance with this variation, authorization code 900 includes m-bit electronic signature 905 which is generated in the same manner as electronic signature 605. Authorization code 900 also includes encrypted reconfiguration segment 910 having a variable length. The formation of segment 910 is fully described below. It suffices to know for now that the length of segment 910 depends on the actual reconfiguration which needs to be realized.

In a first example where authorization code 900 may be used, a user requests an activation of a currently disabled feature option, say, option C. In accordance with an aspect of the invention, for each feature option, a pair of memory locations are allocated in memory 200 of PSD 110 to pre-store "1" and "0" bit values representing, e.g., an "enabled" status and a "disabled" status of the option, respectively. The resulting memory map is illustrated in Fig. 10. As shown in Fig. 10, a first pair of memory addresses 1A2B (hexadecimal) and 1A2C in memory 200 correspond to feature option A, where "0" is pre-stored at memory address 1A2B and "1" is pre-stored at memory address 1A2C; a second pair of memory addresses 1A2D and 1A2E in memory 200 correspond to feature option B, where "0" is pre-stored at memory address 1A2D and "1" is pre-stored at memory address 1A2E; a third pair of memory addresses 1A2F and 1A30 in memory 200 correspond to feature option C, where "0" is pre-stored at memory address 1A2F and "1" is pre-stored at memory address 1A30; and so on and so forth. This memory map is made known to data center 125 beforehand and registered in

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field 165 of the record pertaining to system 100 in database 140.

Continuing the above example, assuming that the request for activating feature option C is granted,

5 processor 130 in data center 125 changes the value of the bit in option number (f) corresponding to option C from the previous value "0" to the new value "1" to activate the option, as indicated at step 1103 in Fig. 11.

Processor 130 at step 1106 generates electronic signature  
10 905 based on items (a) through (f) in the manner described before, where option number (f) incorporates the new bit value "1" corresponding to option C.

Processor 130 then generates encrypted reconfiguration segment 910. Specifically, at step 1109  
15 processor 130 looks up from the aforementioned registered memory map the memory address corresponding to option C at which the new bit value "1" is pre-stored in memory 200. In this instance, the memory address in question is 1A30. At step 1112, processor 130 encrypts the memory  
20 address using the aforementioned second encryption algorithm, resulting in segment 910. Authorization code 900 consisting of electronic signature 905 and encrypted reconfiguration segment 910 is fed to system 100 in a reconfiguration mode either by direct communications or a  
25 user entry.

After receiving authorization code 900, unit 210 at step 1203 in Fig. 12 decrypts segment 910 of authorization code 900 using the decryption algorithm inverse to the second encryption algorithm, thereby  
30 recovering the memory address 1A30. It should be noted that segment 910 starts from the  $(m+1)^{th}$  bit of received authorization code 900. Unit 210 at step 1206 retrieves from memory 200 the bit value "1" corresponding to option

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C at memory address 1A30. Unit 210 at step 1209 overwrites the current bit value "0" corresponding to option C in option number buffer 243 with the retrieved bit value "1," thereby activating option C. Unit 210 at  
5 step 1212 gathers items (i) through (v) in the manner described before, and reads from option number buffer 243 the modified option number (vi). Unit 210 at step 1215 independently generates an electronic signature based on items (i) through (vi) in the manner described before.  
10 Unit 210 compares the resulting electronic signature with received electronic signature 905 of received authorization code 900, as indicated at step 1217. If they match, the authorization code is validated. Otherwise, an "Invalid Authorization Code" message would  
15 be displayed on computer 105, and generation of postage indicia would be halted as described before.

Although the above processes involve only one feature option, i.e., option C, the processes similarly follow where two or more options need to be changed at the  
20 same time. In that case, the memory addresses associated with the multiple options are concatenated and then encrypted using the second encryption algorithm, thereby generating encrypted reconfiguration segment 910. Accordingly, the length of segment 910 increases with the  
25 number of feature options to be changed.

To keep segment 910 relatively short especially when multiple options need to be changed, in an alternative embodiment, segment 910 comprises an encrypted version of offset memory addresses, rather than  
30 full memory addresses, associated with the options. Referring briefly to Fig. 10, since the full memory address associated with each feature option illustratively starts with "1A," unit 210 can be

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programmed to assume that the first two nibbles of the option memory addresses are always "1A". Thus, when option A needs to be changed, only the offset address "2B" or "2C" needs to be communicated using segment 910 for enabling or disabling the option; when option B needs to be changed, only the offset address "2D" or "2E" needs to be communicated using segment 910 for enabling or disabling the option; when option C needs to be changed, only the offset address "2F" or "30" needs to be communicated using segment 910 for enabling or disabling the option; and so on and so forth.

In a second example where authorization code 900 may be used, to save memory space in memory 200, the storage of "1" and "0" values for each option as set forth in the memory map of Fig. 10 may be totally avoided. Since a change in each option involves changing the corresponding bit value in option number buffer 243 to the opposite value, the encrypted reconfiguration segment 910 only needs to communicate the identities of the feature options which need to be changed. After learning the identities of such options based on segment 910, unit 210 locate the bits in buffer 243 corresponding to the identified options and change their current bit values to the opposite values, respectively.

Thus, in this second example, segment 910 is formed by encrypting codes identifying the respective options to be changed. Various designs of the codes are possible as long as each code uniquely identifies a respective option. For example, for the sake of convenience, the code identifying an option may represent the bit position corresponding to the option in buffer 243. Thus, the code for option A may be "01" representing the first bit position of buffer 243



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corresponding to option A; the code for option B may be "02" representing the second bit position of buffer 243 corresponding to option B; the code for option C may be "03" representing the third bit position of buffer 243  
5 corresponding to option C; and so on and so forth.

Continuing the second example, let's say that feature options A and C need to be changed in this instance. Thus, system 100 is fed with authorization code 900 wherein electronic signature 905 is generated by  
10 processor 130 in data center 125 in the manner described before, and encrypted reconfiguration segment 910 contains an encrypted version of the option codes "0103" in concatenation, where the option code "01" identifies option A and option code "03" identifies option C.

15 As indicated at step 1303 in Fig. 13, unit 210 first decrypts encrypted reconfiguration segment 910 of received authorization code 900, thereby recovering the option codes "0103". Based on a first option code "01" representing the first bit position in buffer 243  
20 corresponding to option A, which needs to be changed, unit 210 at step 1306 changes the current value of the first bit in buffer 243 to the opposite value. In addition, based on a second option code "03" which immediately follows "01" and which represents the third  
25 bit position in buffer 243 corresponding to option C, which needs to be changed, unit 210 at step 1309 changes the current value of the third bit in buffer 243 to the opposite value. Unit 210 at step 1312, similar to above-described step 1212, gathers items (i) through (v), and  
30 reads from option number buffer 243 the modified option number (vi). Unit 210 at step 1315, similar to above-described step 1215, independently generates an electronic signature based on items (i) through (vi).

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Unit 210 compares the resulting electronic signature with electronic signature 905 of received authorization code 900, as indicated at step 1317 similar to above-described step 1217. If they match, the authorization code is  
5 validated. Otherwise, an "Invalid Authorization Code" message would be displayed on computer 105, and generation of postage indicia would be halted as described before.

We have recognized that for loading new  
10 software on system 100 for a program upgrade or installation without changing feature options, authorization code 900 may consist of electronic signature 905 only, i.e., encrypted reconfiguration segment having a zero length. In this illustrative  
15 embodiment, an array of memory addresses in memory 200 are allocated to pre-store a quantity of possible version numbers of software, e.g., postage franking program 300. As shown in Fig. 14, for example, version number "1" is pre-stored at memory address 1B12; version number "2" is  
20 pre-stored at memory address 1B13; version number "3" is pre-stored at memory address 1B14; and so on and so forth. A version number pointer (not shown) in memory 200 is used to indicate the memory location of the current software version number. Assuming that the  
25 current software version number is "2", the pointer has a value of "1B13".

The new software to be loaded onto system 100 contains a header which in this instance includes the memory address at which the new software version number  
30 is pre-stored. Let's say the new version number is "3" and the header thus contains the memory address "1B14".

In granting the loading of new software onto system 100, processor 130 in data center 125 generates

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authorization code 900 consisting of only electronic signature 905 based on items (a) through (f) in the manner described before, where item (d) has the new software version number. Electronic signature 905 is  
5 provided to system 100 for later verification.

While the new software is being loaded onto system 100 via an online connection or a storage medium, unit 210 in PSD 110 at step 1503 in Fig. 15 changes the  
10 aforementioned version number pointer value to the memory address provided in the header of the new software, i.e., "1B14". As a result, the pointer indicates a new memory location containing the software version number "3". Unit 210 at step 1506 gathers items (i) through (iii), (v) and (vi), and reads from memory address 1B14  
15 indicated by the pointer the new software version number "3" as item (iv). Unit 210 at step 1509, similar to above-described step 1215, independently generates an electronic signature based on items (i) through (vi). Unit 210 compares the resulting electronic signature with  
20 received electronic signature 905, as indicated at step 1511 similar to above-described step 1217. If they match, the authorization code is validated. Otherwise, an "Invalid Authorization Code" message would be displayed on computer 105, and generation of postage  
25 indicia would be halted as described before.

It should be noted at this point that the memory address communicated in the header of the new software may be an offset address, as well, e.g., "12", "13", "14" . . . , rather than its full address, e.g.,  
30 "1B12", "1B13", "1B14" . . . as it is understood that the two most significant nibbles of the full address are always "1B".

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In addition, to save memory space in memory 200, the storage of possible software version numbers as set forth in the memory map of Fig. 14 may be totally avoided, especially where the software version number always increments by one when new software is loaded onto system 100. In that case, a counter (not shown) in PSD 110 may be used to keep track of the current software version number. Unit 210 may be programmed to be responsive to loading of new software onto system 100 to cause the counter to increment by one, thereby updating the software version number (iv). After loading of the new software, unit 210 independently generates an electronic signature based on items (i) through (vi). The generated electronic signature is compared with electronic signature 905 generated by data center 125 in part based on the new software version number in (d). If they match, the loading of new software onto system 100 is authorized.

Because system 100 is configured as an open system, a user may freely load additional software onto computer 105, and add to system 100 hardware components, e.g., peripherals to computer 105. An advantage of adopting the open system configuration is that application software, other than postage generation program 300 described above, may be installed by the user on his/her own in computer 105 to interact with, say, program 300, to realize a more comprehensive mailing process. Such other application software may include, e.g., a billing program for charging postage back to different accounts, an envelope program for printing an address and a postage indicium on an envelope, an address cleansing program for correcting mailing addresses, etc.

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On the other hand, because system 100 is configured as an open system, the integrity of the franking operation thereby may be jeopardized. For example, the user may load illegitimate software on computer 105 to interact with postage generation program 300 to fraudulently print postage indicia. The user may also employ a printer of inferior quality to print substandard postage indicia, which are unreadable by an optical scanner.

Thus, in accordance with an aspect of the invention, the franking-related hardware and software components in system 100 need to be pre-approved. To that end, the components by different vendors need to pass standardized tests to meet certain minimum requirements in, e.g., compatibility with a postage generation program in the franking system, print quality, tamper resistance, efficiency, durability, etc., to become approved. The pre-approved components may then be marketed to users for installation in their franking systems, e.g., system 100. The manner in which the pre-approval requirement of the software and hardware components is enforced when they interact with the postage generation program is fully described below. It suffices to know for now that each pre-approved software component includes a valid registration identifier which is necessary for the software component to interact with the postage generation program. Similarly, for each pre-approved hardware component (e.g., a printer), its utility software (e.g., printer driver software) interfacing the hardware component with the postage generation program also includes a valid registration identifier, which is necessary for it to interact with the postage generation program.

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In accordance with another aspect of the invention, a registration identifier is used to (1) identify a franking-related hardware or software component in a franking system configuration, (2) enforce the pre-approval requirement of such a hardware or software component. To achieve object (1), each pre-approved software component, and hardware component including its utility software is assigned a different registration identifier. A duplicate copy of the registration identifier is registered in memory 135 of data center 125. Thus, data center 125 includes in memory 135 a collection of registration identifiers 145 which identify and are associated with different pre-approved components. The registration identifier collection is updated from time to time as additional software and hardware component pass the standardized tests and become approved.

When each pre-approved component interacts with the postage generation program, the registration identifier in the component is compared with the registered registration identifier. If the two identifiers match or correspond, the component is verified to be pre-approved, thereby achieving object (2).

A pre-approved envelope program having a registration identifier for verification of its pre-approval status will now be described. This envelope program may be purchased from a third-party vendor and installed by the user in computer 105. Because of its pre-approval status, the envelope program includes therein a registration identifier which identifies the program. Figs. 16A, 16B and 16C jointly illustrate the envelope program and interactions with postage generation

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program 300 to print addresses and a postage indicium on an envelope. Instructed by such an envelope program, computer 105 elicits from the user the size of the envelope to be used for a mailpiece, as indicated at step 5 1603 in Fig. 16A. Computer 105 at step 1606 displays an image of the envelope having the specified size on its screen. Computer 105 at step 1609 prompts the user to type originating mailing address and destination mailing address at desired locations on the displayed envelope.

10 Computer 105 at step 1612 prompts the user to indicate the desired location on the displayed envelope where a postage indicium is to be printed. Accordingly, the user utilizes a mouse device to indicate the desired location which, in this instance, is the upper right corner of the 15 envelope according to the postal authority regulations.

Computer 105 thereafter provides at step 1615 a draft option which enables the user to preview the envelope including a specimen indicium appearing at the user defined location before the envelope is printed.

20 Thus, this option allows the user to check the format of the envelope and the relative placement of the address blocks, and postage indicium on the envelope before the user is committed thereto.

After the user decides to proceed with the 25 printing of the envelope at step 1617, computer 105 at step 1618 generates a first ensemble of control characters indicating the position of the originating mailing address, a second ensemble of control characters indicating the position of the destination mailing 30 address, and a third ensemble of control characters indicating the position of the postage indicium on the envelope. At step 1621, computer 105 inserts the first, second and third ensembles of control characters into the

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data stream representative of the texts of the originating and destination mailing addresses, where the originating mailing address data is preceded by the first ensemble of control characters, and the destination mailing address data is preceded by the second ensemble of control characters. The resulting data stream is formatted pursuant to the protocol required by printer 115. For example, if printer 115 is a printer manufactured by Hewlett-Packard Co., the data stream would be in accordance with the Hewlett-Packard printer control language (HP-PCL).

The envelope program proceeds from step 1621 to step 1623 in Fig. 16B where postage generation program 300 described before is invoked. Upon such an invocation, unit 210 in PSD 110 is interrupted, and requests computer 105 to pass thereto a copy of the registration identifier in the envelope program for examination, as indicated at step 1624. If computer 105 fails to produce a copy of the registration identifier, unit 210 causes computer 105 to display thereon an "Unauthorized Component" message, and prevents generation of any postage indicium, as indicated at step 1625.

Otherwise, if computer 105 produces a copy of the registration identifier of the envelope program, unit 210 at step 1626 compares the registration identifier from computer 105 with each of registration identifiers 245 in PSD 110, which are associated with the pre-approved components which have been verified at least once. At step 1627, unit 210 determines whether a corresponding registration identifier is found amongst registration identifiers 245. Assuming that this is not the first time that the envelope program invokes program 300, and the registration identifier of the envelope



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program has been verified at least once, unit 210 in this instance finds the corresponding registration identifier amongst registration identifiers 245, and proceeds to step 1642 in Fig. 16C described below.

5           Otherwise, if the registration identifier of the envelope program has never been verified, unit 210 fails to find a corresponding registration identifier amongst registration identifiers 245. Unit 210 then causes modem 120 to establish at step 1628 a  
10 communication connection with data center 125. Unit 210 transmits at step 1629 the serial number of PSD 110 and copy of the registration identifier of the envelope program to data center 125 where processor 130 at step 1630 compares the received registration identifier with  
15 each of registration identifiers 145 in data center 125, which as mentioned before consist of the registration identifiers of all pre-approved components ever. Processor 130 at step 1631 determines whether a corresponding registration identifier is found amongst  
20 registration identifiers 145.

          Since in this instance, the envelope program is pre-approved, processor 130 locates a corresponding registration identifier amongst registration identifiers 145. Processor 130 recognizes that the envelope program  
25 identified by the corresponding registration identifier is being run on system 100, which is identified by the received serial number of PSD 110. Accordingly, processor 130 at step 1633 updates the record of system 100 in database 140 to also include in field 165 thereof  
30 an indication that the envelope program is now part of the configuration of system 100. Processor 130 then at step 1636 returns the copy of the registration identifier of the envelope program to unit 210, with an

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acknowledgment that such a registration identifier is valid, and then terminates the communication connection. In response, unit 210 at step 1639 in Fig. 16C adds the returned registration identifier to registration  
5 identifiers 245 in PSD 110 for subsequent verification, obviating the need to have processor 130 involved in the subsequent verification of such a registration identifier. Unit 210 then goes on to help generate a postage indicium, as indicated at step 1642.

10           Otherwise, if processor 130 at step 1631 fails to locate a corresponding registration identifier amongst registration identifiers 145, processor 130 at step 1645 in Fig. 16B returns only a negative acknowledgement that the received registration identifier is invalid, and  
15 terminates the communication connection. In response to the negative acknowledgement, unit 210 returns to step 1625.

          After step 1642 in Fig. 16C and execution of program 300, a print image of an appropriate postage  
20 indicium is prepared. At step 1648 a printer driver program associated with printer 115 is invoked to print the originating and destination addresses, and postage indicium on an envelope fed to printer 115. As the printer driver program interacts with program 300 to  
25 receive the print image of the postage indicium resulting from program 300, printer 115 including the printer driver program needs to be pre-approved. As such, upon the invocation of the printer driver program, unit 210 in PSD 110 is interrupted, and requests computer 105 to pass  
30 thereto a copy of the registration identifier in the printer driver program for examination, as indicated at step 1651. If computer 105 fails to produce a copy of such a registration identifier, unit 210 denies the

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printer driver program of the print image of the postage indicium, as indicated at step 1654.

Otherwise, if computer 105 produces a copy of the registration identifier, unit 210 at step 1657  
5 compares the registration identifier from computer 105 with each of registration identifiers 245 in PSD 110 which, as mentioned before, are associated with the pre-approved components which have been verified at least once. Assuming that this is not the first time that the  
10 printer driver program is invoked to print a postage indicium, and the registration identifier of the printer driver program has been verified at least once, unit 210 in this instance locates at step 1660 the corresponding registration identifier amongst registration identifiers  
15 245. The printer driver program is provided with the print image of the postage indicium, as indicated at step 1663. At step 1667, printer 115 prints on the provided envelope the originating and destination addresses and the postage indicium at the user defined positions, based  
20 on the aforementioned data stream from computer 105 and the print image of the postage indicium.

Otherwise, if at step 1660 unit 210 fails to locate the corresponding registration identifier, processor 130 would be involved in verifying the  
25 registration identifier with the steps similar to steps 1628 through 1631, and 1633, 1636, 1639 and 1645 described before, which are not repeated here.

It is apparent from the disclosure heretofore that database 140 in data center 125 has records of  
30 configurations of all of the franking systems served by center 125. In particular, field 165 of each record pertaining to a respective franking system includes configuration information concerning, among others, the

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hardware configuration of the computer (i.e., item (b)), the enabled or disabled options (i.e., item (f)), the version of the postage generation program (i.e., item (d)), and other hardware and software components  
5 interacting with the postage generation program in the franking system. Such information in database 140 can be used by a postal authority to effectively monitor and control the configurations of individual franking systems in the field.

10 The foregoing merely illustrates the principles of the invention. It will thus be appreciated that those skilled in the art will be able to devise numerous other arrangements which embody the principles of the invention and are thus within its spirit and scope.

15 For example, to further deter unauthorized reconfiguration of system 100, the encryption algorithms for generating authorization codes may be changed from time to time. The new algorithms may easily be downloaded from data center 125 during a software upgrade  
20 in computer 105, or during a TMS transaction with data center 125. The memory locations in the memory maps of Figs. 10 and 14 may be changed from time to time, as well.

In addition, in the illustrative embodiment,  
25 the memory of computer 105 is distinguished from memory 200 in PSD 110. However, the memory spaces in the two memories may be interchangeable in that some or all of the memory contents in memory 200 may be stored in the memory of computer 105, and vice versa. Similarly, some  
30 or all of the tasks performed by processing unit 210 in PSD 110 in the illustrative embodiment may be performed by computer 105, and vice versa.

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Finally, the illustrative embodiment of the invention is disclosed herein in a form in which various franking and communications functions are performed by discrete functional blocks. These functional blocks may  
5 be implemented in various ways and combinations using logic circuitry and/or appropriately programmed processors, as will be known to those skilled in the art.

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Claims

1. A franking system comprising:

a memory for storing a software component for  
5 generating at least one postage indicium;

a device for receiving an authorization code which  
is derived from at least information concerning the  
software component; and

a processing unit for verifying at least part of the  
10 authorization code to detect any change in the software  
component before the at least one postage indicium is  
generated.

2. The system of claim 1 wherein the information

15 represents a version number of the software component.

3. The system of claim 2 further comprising a counter  
for keeping track of the version number of the software  
component.

20 4. The system of claim 2 wherein memory locations are  
allocated in the memory for storing a plurality of  
version numbers of the software component, respectively,  
the version number of the software component being  
25 indicated as stored at one of the memory locations.

5. The system of claim 1 wherein the information is  
obtained from running a predetermined algorithm on code  
of the software component.

30 6. The system of claim 5 wherein the information  
includes error checking information.

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7. The system of claim 6 wherein the error checking information includes cyclic redundancy check (CRC) bits.

8. The system of claim 6 wherein the error checking  
5 information includes a checksum.

9. The system of claim 1 further comprising a computer where the memory is in, wherein the authorization code is also derived from an identity of the computer.  
10

10. The system of claim 9 wherein the identity of the computer includes a serial number thereof.

11. The system of claim 1 further comprising a postal security device (PSD) where the processing unit is in,  
15 wherein the authorization code is also derived from an identity of the PSD.

12. The system of claim 11 wherein the identity of the  
20 PSD includes a serial number thereof.

13. A franking system comprising:

a memory for storing a software component for generating at least one postage indicium;

25 a buffer for storing an authorization code which is derived from at least information concerning a configuration of the system; and

a processing unit for verifying at least part of the authorization code before the at least one postage  
30 indicium is generated to detect any change in the configuration of the franking system.

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14. The system of claim 13 further comprising software components for providing feature options in the system which are selectively enabled, wherein the configuration concerns at least a setting of the feature options.

5

15. The system of claim 13 wherein the configuration concerns at least a version of the software component.

16. The system of claim 13 further comprising a device  
10 for maintaining a postage fund for postage dispensation in the system, wherein the processing unit is within the device.

17. The system of claim 16 wherein the authorization  
15 code is also derived from an identity of the device.

18. The system of claim 17 wherein the identity of the device includes a serial number thereof.

20 19. The system of claim 13 further comprising a computer where the memory is in, wherein the authorization code is also derived from an identity of the computer.

25 20. The system of claim 19 wherein the identity of the computer includes a serial number thereof.

21. A franking system for generation of postage indicia, the system having a plurality of feature options which may be enabled, the system comprising:

30 a device for receiving an authorization code which is generated outside the system in response to a request for a selected setting of the feature options different from a current setting thereof, the authorization code



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comprising a code segment and a data segment, the code segment being derived from at least information concerning the selected setting of the feature options, the data segment containing data concerning one or more  
5 of the feature options;

a buffer for effecting the selected setting of the feature options based on the data; and

a processing unit for verifying the code segment to determine whether generation of postage indicia based on  
10 the selected setting of the feature options is allowed.

22. The system of claim 21 wherein the data includes the information concerning the setting of the feature options.

15

23. The system of claim 21 wherein the data is encrypted.

24. The system of claim 21 wherein the selected setting  
20 of the feature options involves changing one or more of the feature options, with respect to the current setting of the feature options, the length of the data segment being a function of a quantity of the one or more of the feature options.

25

25. The system of claim 24 wherein the data indicates memory addresses which are associated with the one or more of the feature options, respectively, a value being stored at each memory address and the feature option  
30 associated with the memory address is changed to the value.

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26. The system of claim 25 wherein the data includes offset memory addresses which are associated with the one or more of the feature options, respectively.

5 27. The system of claim 24 wherein the data identifies the one or more of the feature options.

28. A franking system comprising:

10 a first memory for storing a first software component for realizing at least one postage indicium, a second software component being stored in the first memory for interacting with the first software component, the second software component including a selected identifier;

15 a second memory for storing a plurality of identifiers; and

a processing unit for determining whether one of the plurality of identifiers corresponds to the selected identifier in the second software component when the  
20 second software component interacts with the first software component, the at least one postage indicium being realized only when one of the plurality of identifiers corresponds to the selected identifier.

25 29. The system of claim 28 further comprising a device for maintaining a postage fund for postage dispensation in the system, wherein the second memory is within the device.

30 30. The system of claim 28 wherein the selected identifier identifies the second software component.

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31. The system of claim 28 further comprising at least one hardware component, wherein the second software component includes utility software for interfacing the first software component with the at least one hardware component.

32. A system for reconfiguring a franking apparatus for generating postage indicia, the franking apparatus including a device for maintaining a postage fund for postage dispensation in the franking apparatus, the system comprising:

a memory for storing a value of an account for replenishing the postage fund in the franking apparatus; and

a processor for reconfiguring the franking apparatus, a reconfiguration of the franking apparatus incurring a cost, the value of the account being adjusted to account for the cost, the value of the postage fund in the franking apparatus being unaffected by the reconfiguration.

33. The system of claim 32 wherein the franking apparatus is remotely reconfigured through a communication connection.

34. The system of claim 32 wherein the reconfiguration of the franking apparatus concerns at least a setting of feature options in the franking apparatus.

35. The system of claim 32 wherein the reconfiguration of the franking apparatus concerns at least a version of a software component in the franking apparatus.

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36. The system of claim 32 wherein the memory also stores information concerning a current configuration of the franking apparatus.

5 37. The system of claim 36 wherein the processor causes transmission of a menu to the franking apparatus for the reconfiguration thereof, the menu being generated based on the information.

10 38. A method for use in a franking system comprising:  
storing a software component for generating at least one postage indicium;

receiving an authorization code which is derived from at least information concerning the software

15 component; and

verifying at least part of the authorization code to detect any change in the software component before the at least one postage indicium is generated.

20 39. The method of claim 38 wherein the information represents a version number of the software component.

40. The method of claim 39 further comprising keeping track of the version number of the software component  
25 using a counter in the system.

41. The method of claim 39 further comprising allocating memory locations to store a plurality of version numbers of the software component, respectively, the version  
30 number of the software component being indicated as stored at one of the memory locations.

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42. The method of claim 38 wherein the information is obtained from running a predetermined algorithm on code of the software component.

5 43. The method of claim 42 wherein the information includes error checking information.

44. The method of claim 43 wherein the error checking information includes CRC bits.

10

45. The method of claim 43 wherein the error checking information includes a checksum.

15 46. The method of claim 38 wherein the authorization code is also derived from an identity of a computer in the system.

47. The method of claim 46 wherein the identity of the computer includes a serial number thereof.

20

48. The method of claim 38 wherein the authorization code is also derived from an identity of a PSD in the system.

25 49. The method of claim 38 wherein the identity of the PSD includes a serial number thereof.

50. A method for use in a franking system comprising:  
storing a software component for generating at least  
30 one postage indicium;  
storing an authorization code which is derived from  
at least information concerning a configuration of the  
system; and

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verifying at least part of the authorization code before the at least one postage indicium is generated to detect any change in the configuration of the franking system.

5

51. The method of claim 50 further comprising providing feature options in the system which are selectively enabled, wherein the configuration concerns at least a setting of the feature options.

10

52. The method of claim 50 wherein the configuration concerns at least a version of the software component.

15

53. The method of claim 50 wherein the authorization code is also derived from an identity of a device for maintaining a postage fund for postage dispensation in the system.

20

54. The method of claim 53 wherein the identity of the device includes a serial number thereof.

55. The method of claim 50 wherein the authorization code is also derived from an identity of a computer.

25

56. The method of claim 55 wherein the identity of the computer includes a serial number thereof.

30

57. A method for use in a franking system for generation of postage indicia, the system having a plurality of feature options which may be enabled, the method comprising:

receiving an authorization code which is generated outside the system in response to a request for a

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selected setting of the feature options different from a current setting thereof, the authorization code comprising a code segment and a data segment, the code segment being derived from at least information  
5 concerning the selected setting of the feature options, the data segment containing data concerning one or more of the feature options;

effecting the selected setting of the feature options based on the data; and

10 verifying the code segment to determine whether generation of postage indicia based on the selected setting of the feature options is allowed.

58. The method of claim 57 wherein the data includes the  
15 information concerning the setting of the feature options.

59. The method of claim 57 wherein the data is encrypted.

20

60. The method of claim 57 wherein the selected setting of the feature options involves changing one or more of the feature options, with respect to the current setting of the feature options, the length of the data segment  
25 being a function of a quantity of the one or more of the feature options.

61. The method of claim 60 wherein the data indicates memory addresses which are associated with the one or  
30 more of the feature options, respectively, a value being stored at each memory address and the feature option associated with the memory address is changed to the value.

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62. The method of claim 61 wherein the data includes offset memory addresses which are associated with the one or more of the feature options, respectively.

5 63. The method of claim 57 wherein the data identifies the one or more of the feature options.

64. A method for use in a franking system comprising:  
storing a first software component for realizing at  
10 least one postage indicium;  
storing a second software component for interacting with the first software component, the second software component including a selected identifier;  
storing a plurality of identifiers;  
15 determining whether one of the plurality of identifiers corresponds to the selected identifier in the second software component when the second software component interacts with the first software component;  
and  
20 realizing the at least one postage indicium when one of the plurality of identifiers corresponds to the selected identifier.

65. The method of claim 64 wherein the selected key  
25 identifies the second software component.

66. The method of claim 64 wherein the second software component includes utility software for interfacing the first software component with at least one hardware  
30 component in the system.



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67. A method for reconfiguring a franking apparatus for generating postage indicia, the franking apparatus including a device for maintaining a postage fund for postage dispensation in the franking apparatus, the  
5 method comprising:

storing a value of an account for replenishing the postage fund in the franking apparatus;

reconfiguring the franking apparatus, a reconfiguration of the franking apparatus incurring a  
10 cost; and

adjusting the value of the account to account for the cost, the value of the postage fund in the franking apparatus being unaffected by the reconfiguration.

15 68. The method of claim 67 wherein the franking apparatus is remotely reconfigured through a communication connection.

69. The method of claim 67 wherein the reconfiguration  
20 of the franking apparatus concerns at least a setting of feature options in the franking apparatus.

70. The method of claim 67 wherein the reconfiguration of the franking apparatus concerns at least a version of  
25 a software component in the franking apparatus.

71. The method of claim 67 further comprising storing information concerning a current configuration of the franking apparatus.

30

72. The method of claim 71 further comprising transmitting a menu to the franking apparatus for the

-51-

reconfiguration thereof, the menu being generated based on the information.

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FIG. 1

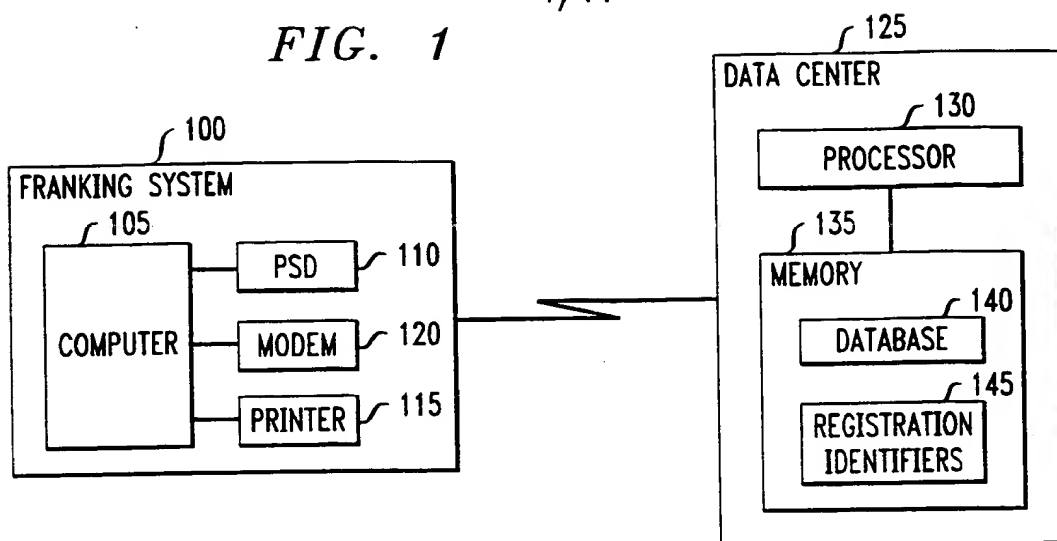


FIG. 2

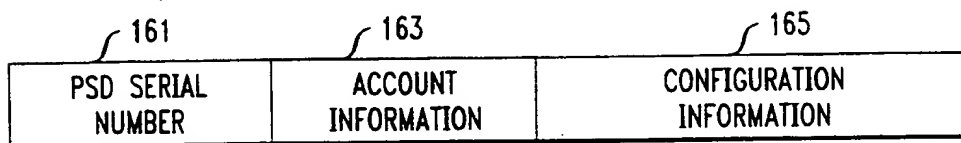
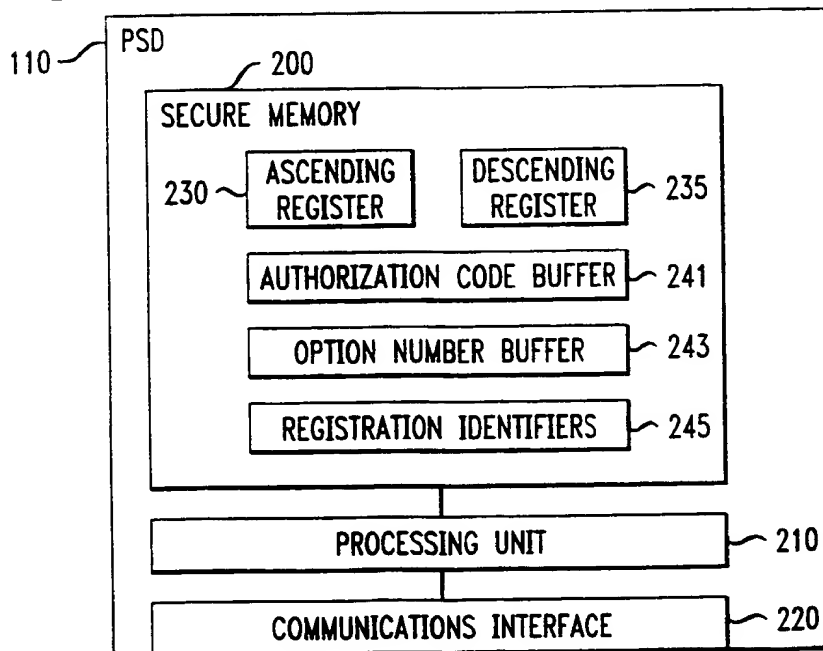


FIG. 3



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FIG. 4

300

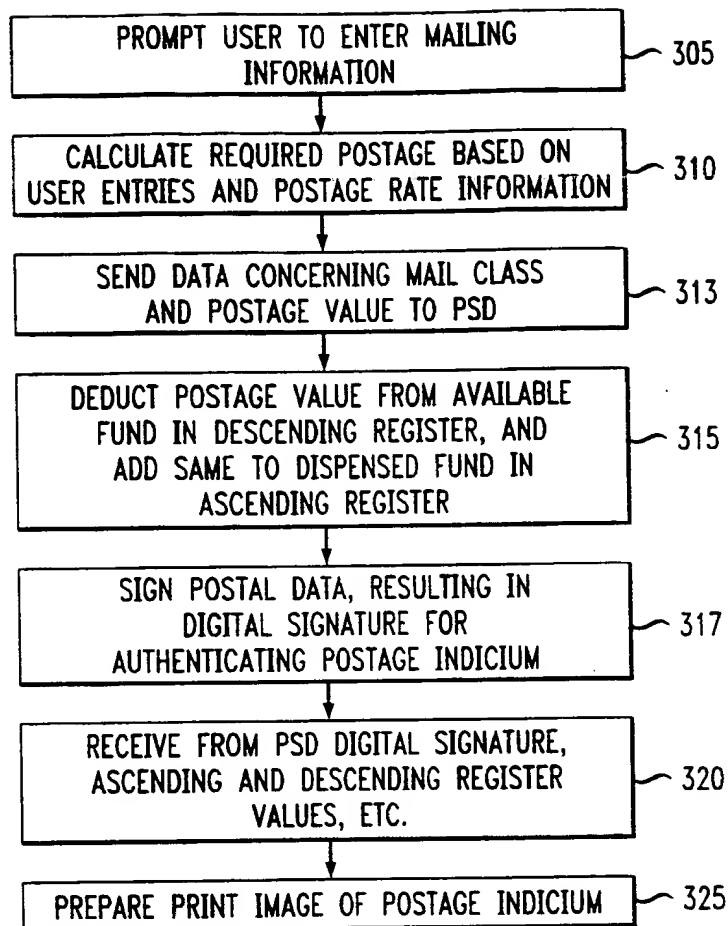
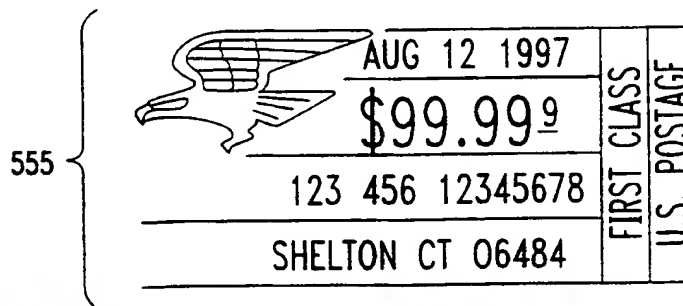
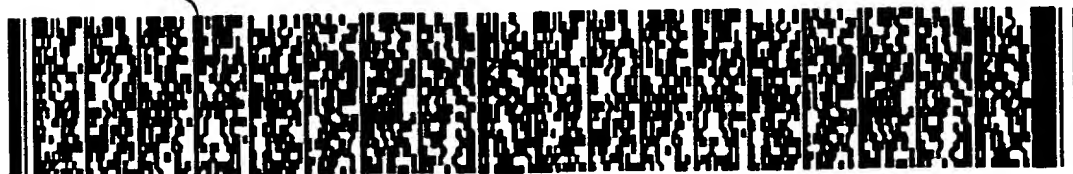


FIG. 5

500



560



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FIG. 6

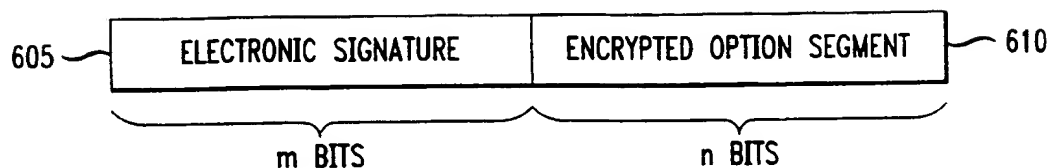
600

FIG. 7

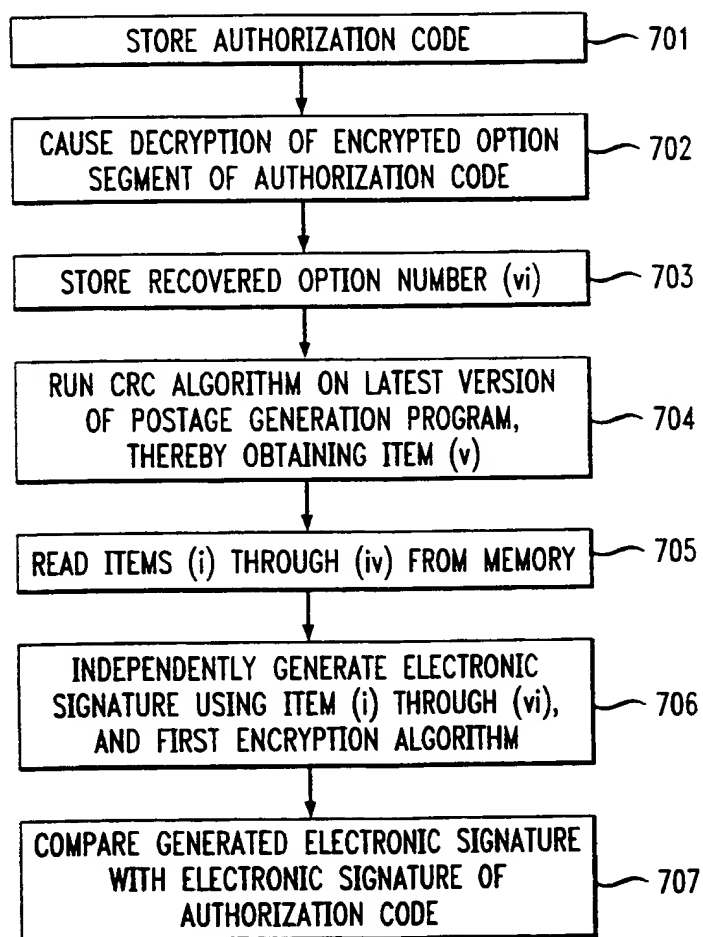
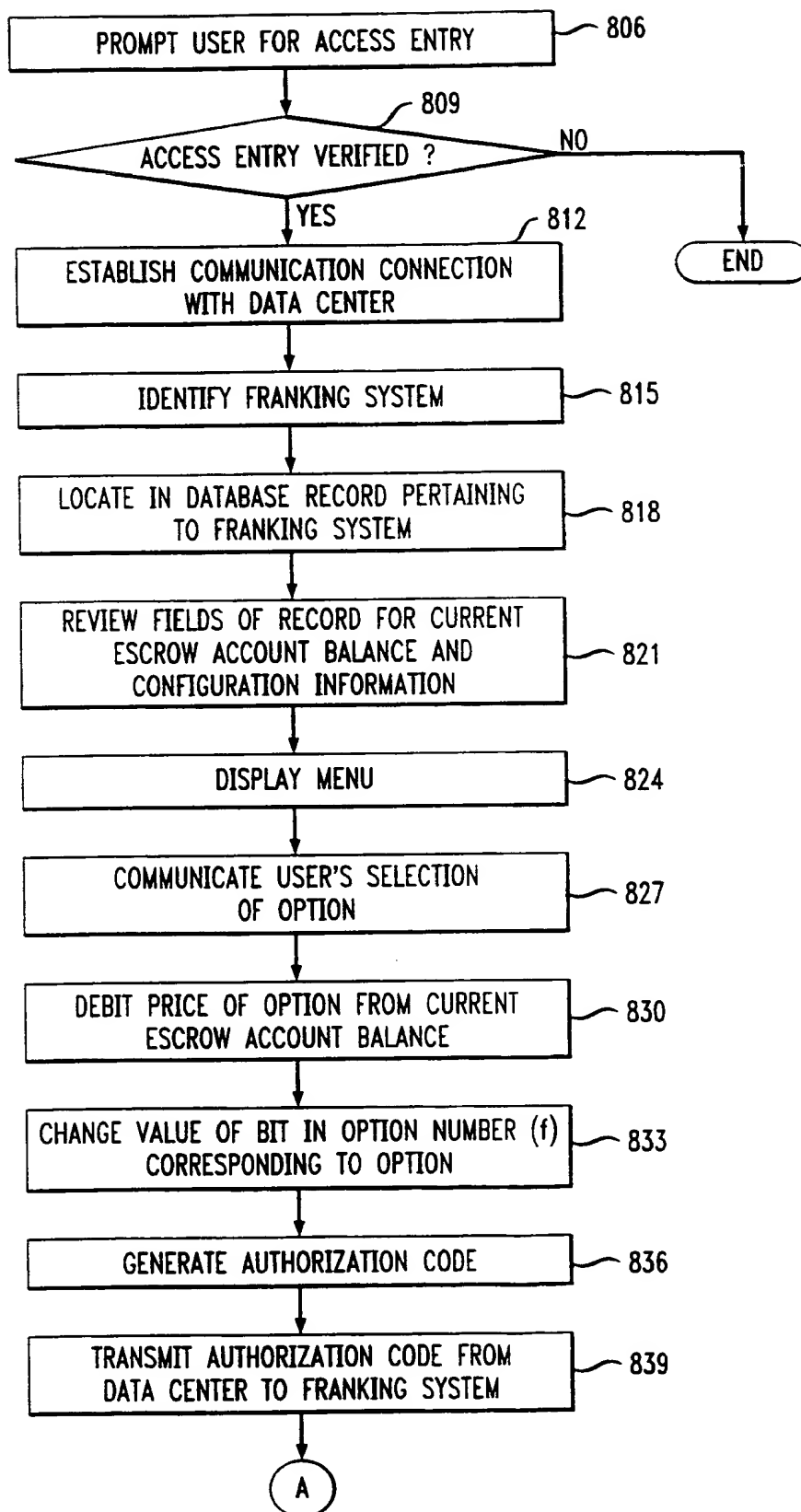


FIG. 8A

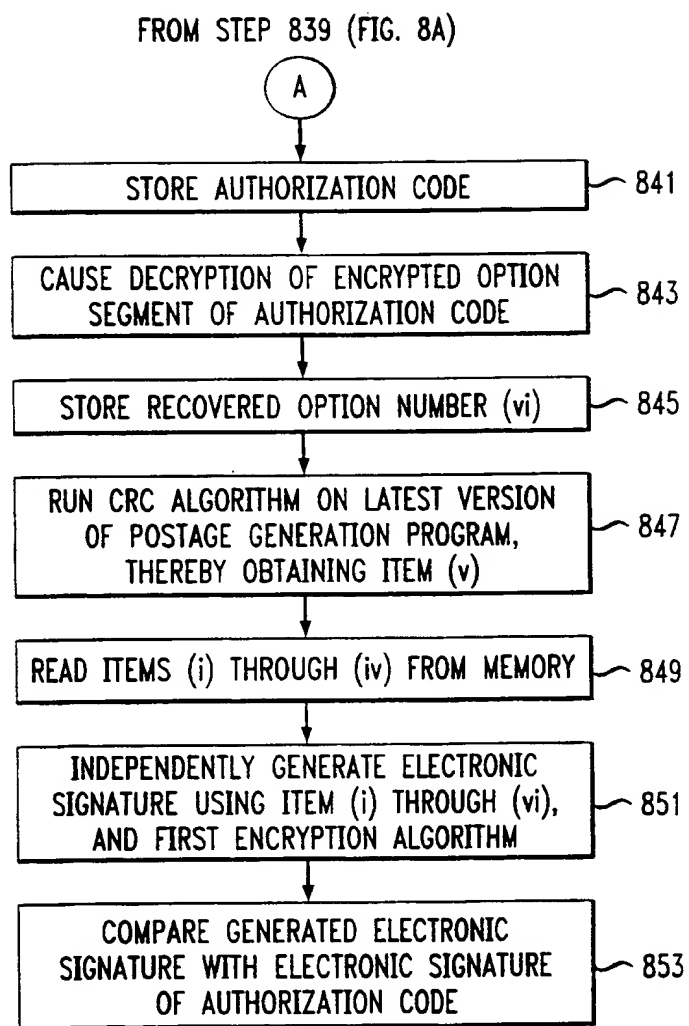
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800

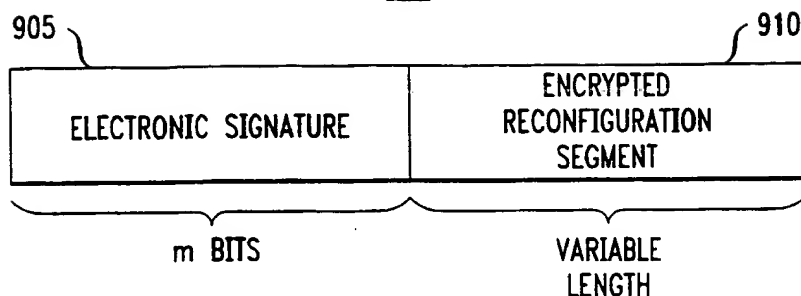


TO STEP 841 (FIG. 8B)

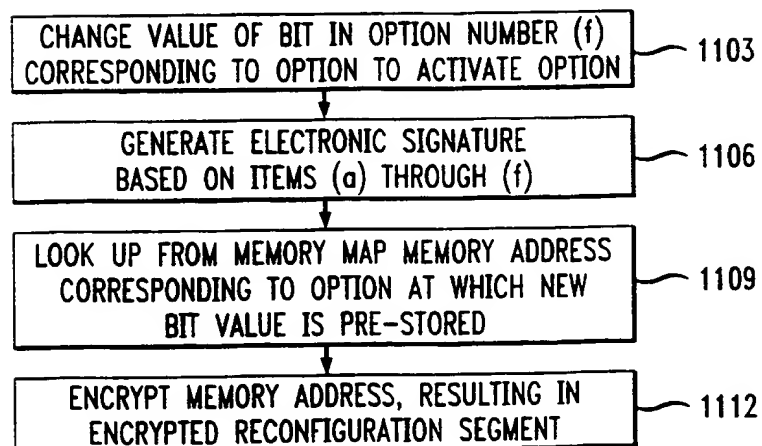
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*FIG. 8B*

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*FIG. 9*900*FIG. 10*

	MEMORY ADDRESS	MEMORY CONTENT
FEATURE OPTION A	1A2B	0
	1A2C	1
FEATURE OPTION B	1A2D	0
	1A2E	1
FEATURE OPTION C	1A2F	0
	1A30	1
⋮	⋮	⋮

*FIG. 11*



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FIG. 12

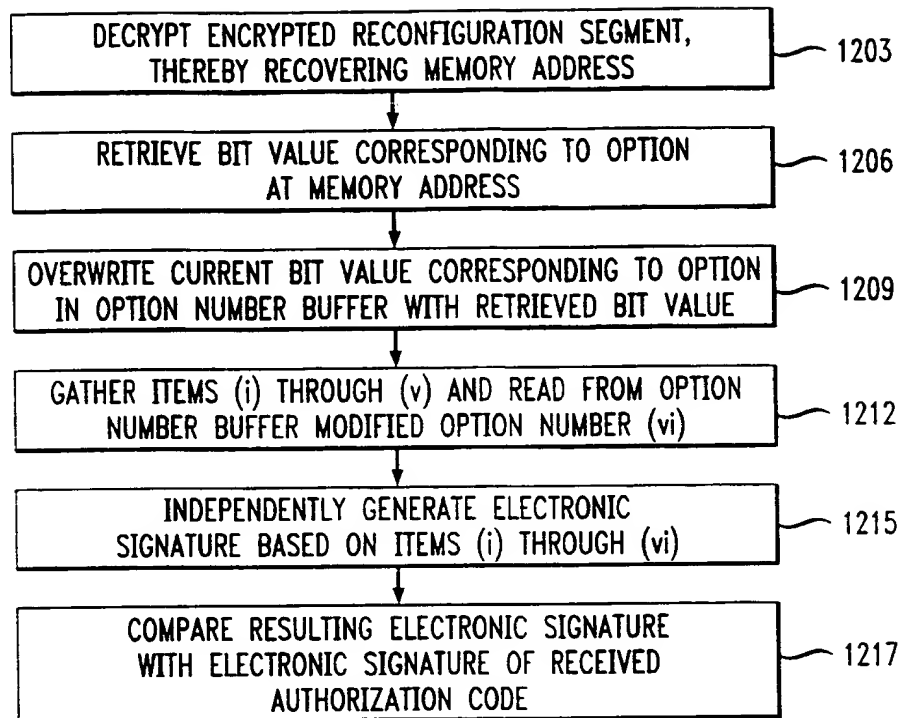
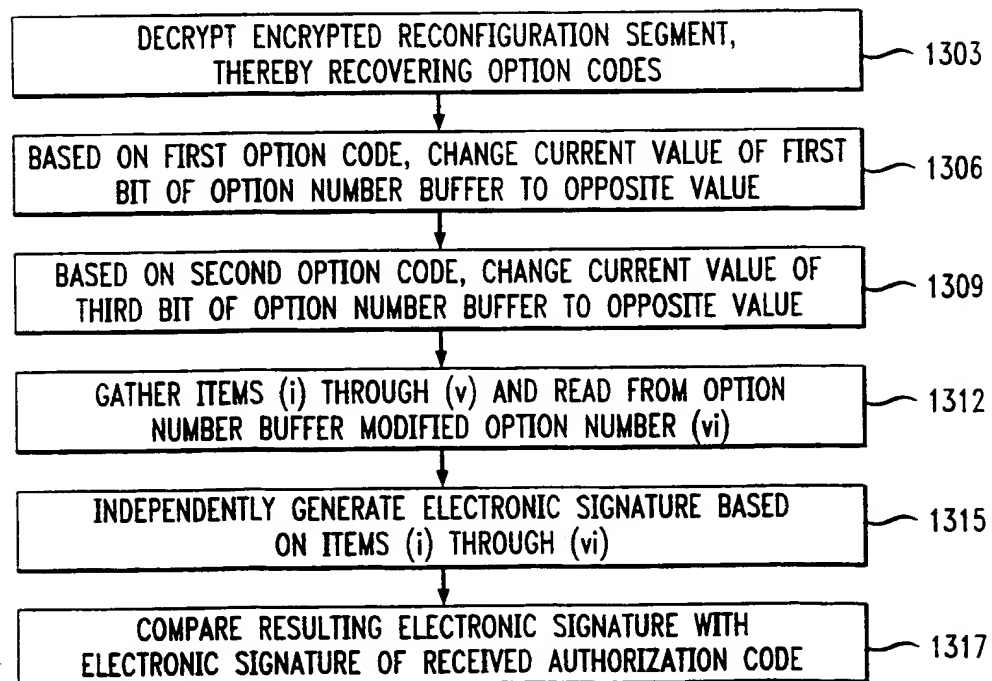


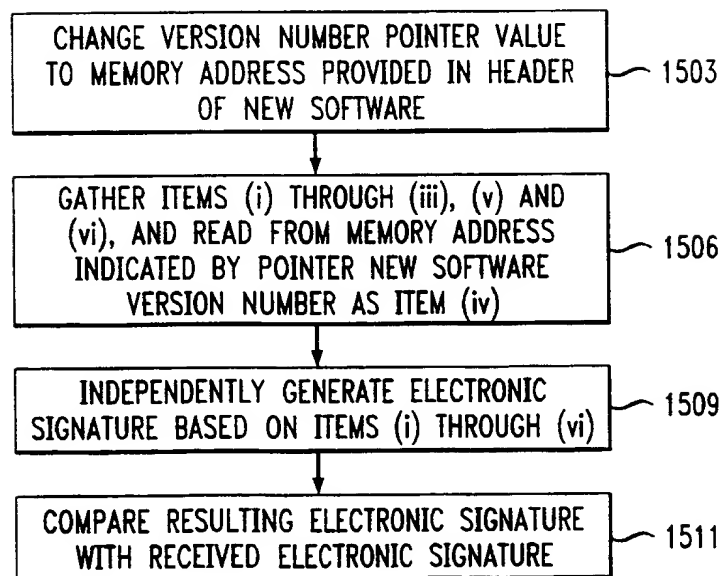
FIG. 13



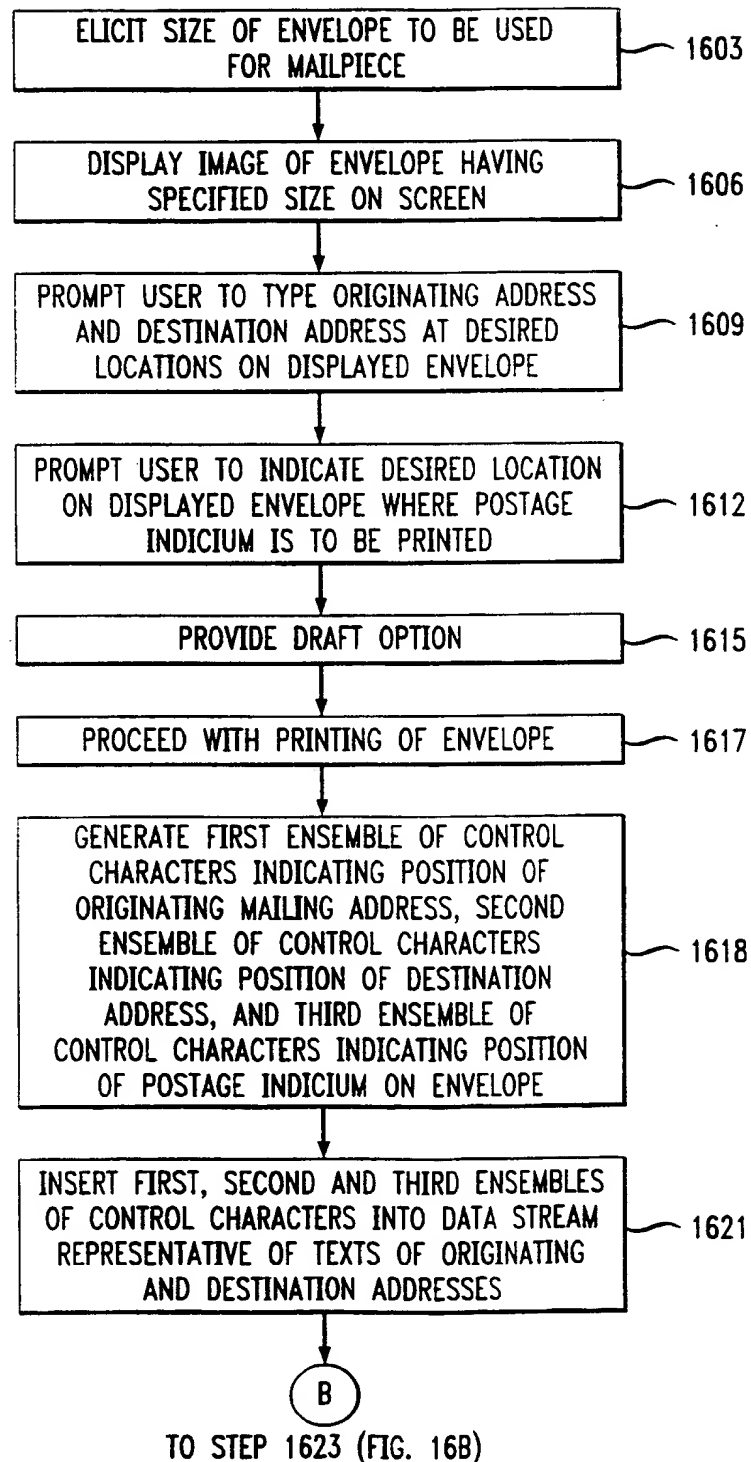
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*FIG. 14*

MEMORY ADDRESS	SOFTWARE VERSION NUMBER
1B12	1
1B13	2
1B14	3
⋮	⋮

*FIG. 15*

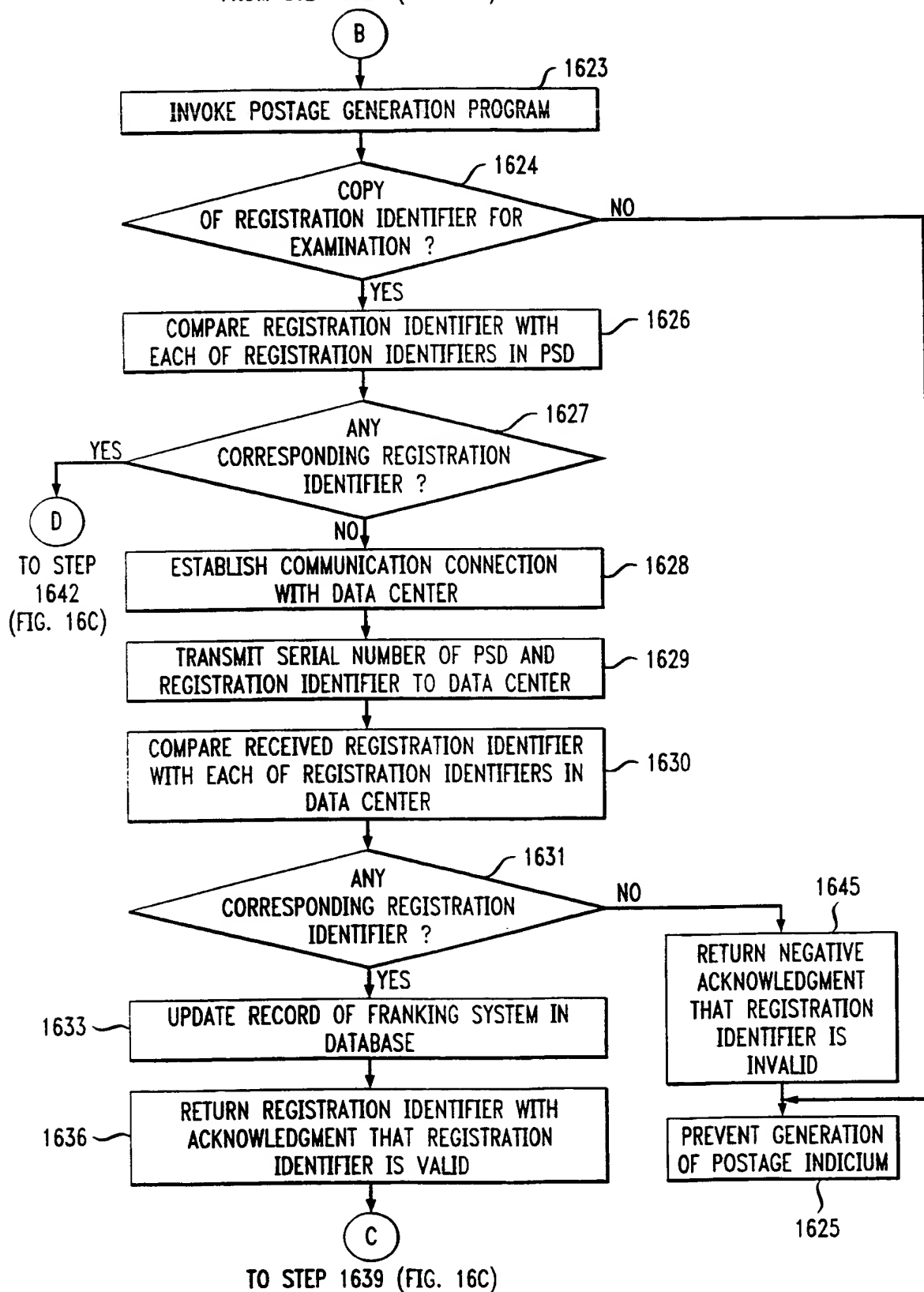
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*FIG. 16A*

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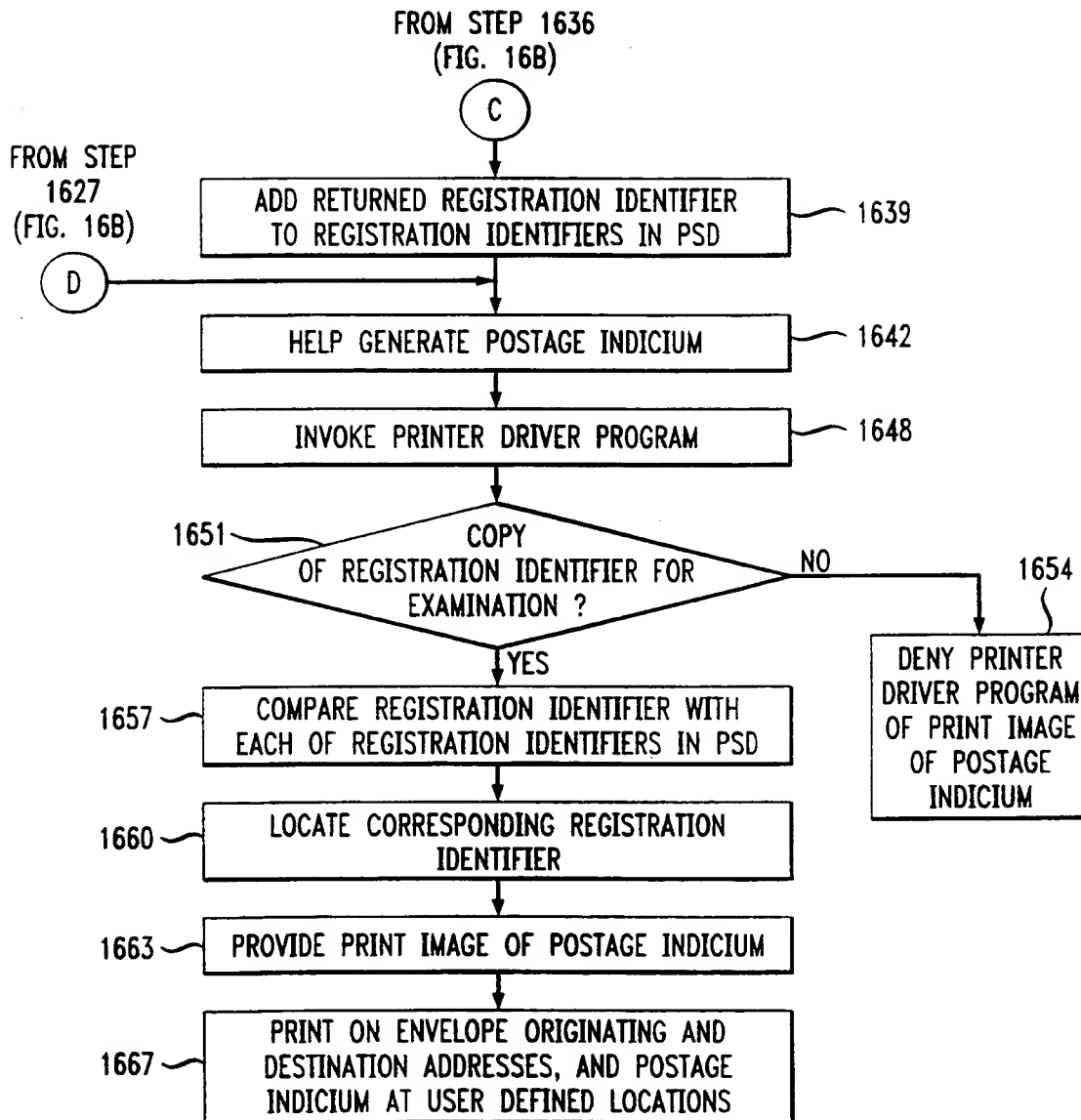
FIG. 16B

FROM STEP 1621 (FIG. 16A)



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FIG. 16C



## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/13488

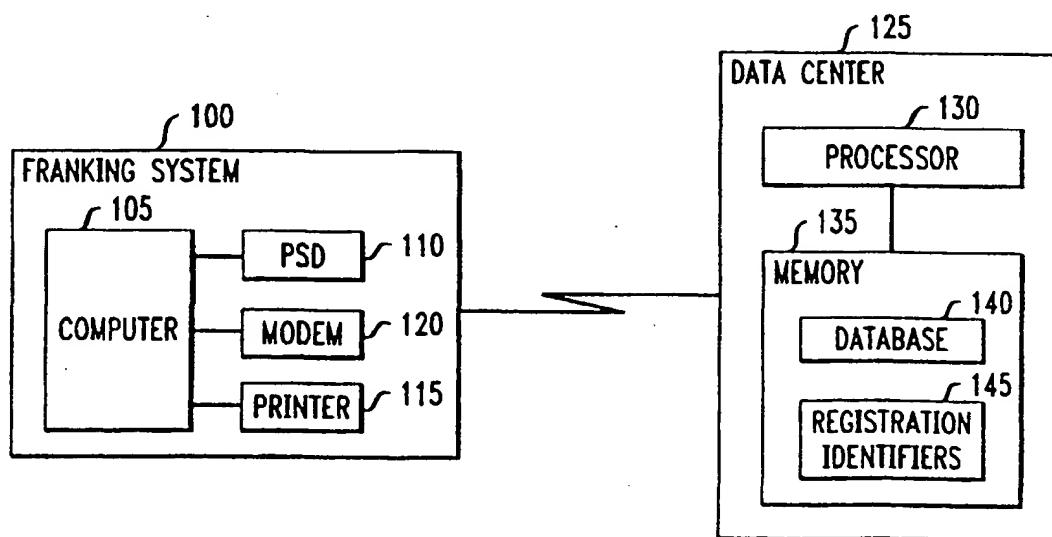
<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(6) : G06F 17/00 US CL : 705/401 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 705/401  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,802,218 A (WRIGHT et al) 31 January 1989, Fig. 8, entire document	1-63
Y,P	US 5,852,813 A (GUENTHER et al) 22 December 1998, entire document	1-63
Y	US 5,680,463 A (WINDEL et al) 21 October 1997, entire document	1-63
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* *A* *E* *L* *O* *P*	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance earlier document published on or after the international filing date document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) document referring to an oral disclosure, use, exhibition or other means document published prior to the international filing date but later than the priority date claimed	*T* *X* *Y* *&* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art document member of the same patent family
Date of the actual completion of the international search 12 AUGUST 1999		Date of mailing of the international search report 05 OCT 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized officer <i>For Eugene Zogger</i> E. TODD VOELTZ Telephone No. (703) 308-3900



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(71) Applicant (for all designated States except US): ASCOM HASLER MAILING SYSTEMS, INC. [US/US]; 19 Forest Parkway, P.O. Box 858, Shelton, CT 06484-0904 (US).			
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(75) Inventors/Applicants (for US only): SCHWARTZ, Robert, G. [US/US]; 191 Linden Avenue, Branford, CT 06405 (US). BROOKNER, George, M. [US/US]; 11 Surrey Drive, Norwalk, CT 06851 (US). ESKANDARI, Fetneh [IR/US]; 144 Dove Lane, Middletown, CT 06457 (US). CROWE, Allen, A. [US/US]; 76 Klein Drive, Prospect, CT 06712 (US). SIMCIK, Mark, E. [US/US]; 141 Park Avenue, Bloomfield, CT 06002 (US).			

(54) Title: TECHNIQUE FOR SECURING A SYSTEM CONFIGURATION OF A POSTAGE FRANKING SYSTEM



## (57) Abstract

In a franking system a postal security device (PSD) tracks a postage fund for dispensing postal indicia and enforce the configuration of the franking system. An authorization code, which is particular to the system, is used to verify the system configuration. An unauthorized change in the system configuration causes invalidation of the code and generation of the postal indicia is denied. Data center (125) records configuration information of each franking system (100). The data center generates a valid authorization code for verification in the franking system based on new configuration information. Components added to the system must be preapproved to prevent fraudulent generation of postage indicia. A registration identifier is assigned to each preapproved component which is necessary for interaction with the franking system.